AMSTRAD COMPUTER USER

THE OFFICIAL AMSTRAD CPC MAGAZINE

September 1990
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CRIMEFIGHTER QUIZ

10 FANTASTIC JUDGE DREDD PACKS MUST BE WON

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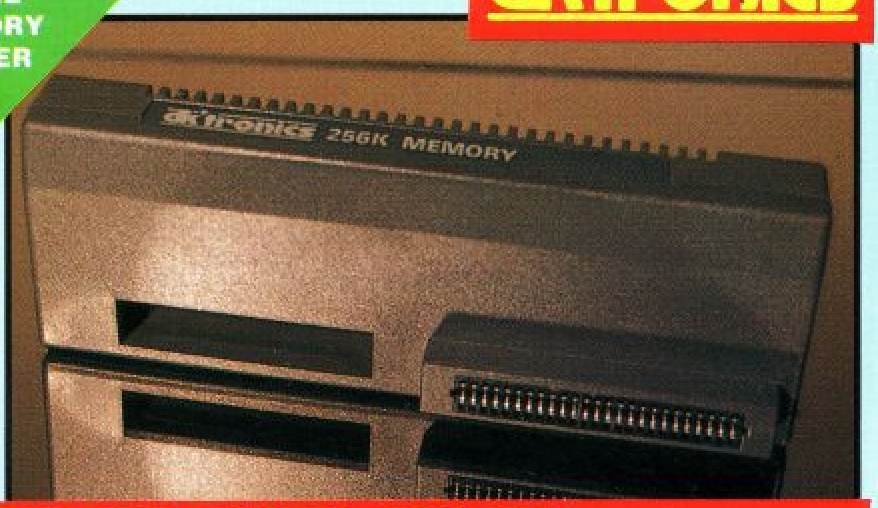
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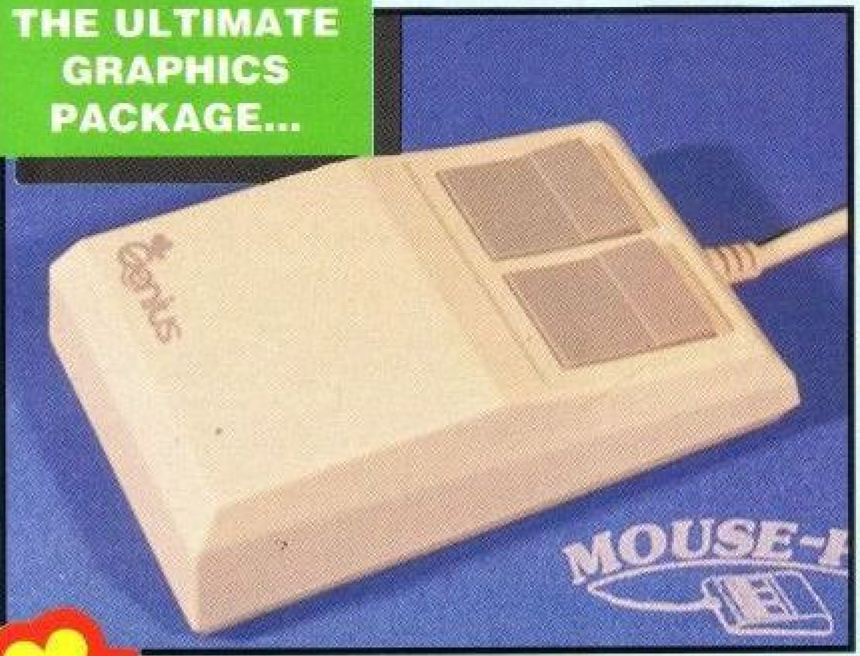
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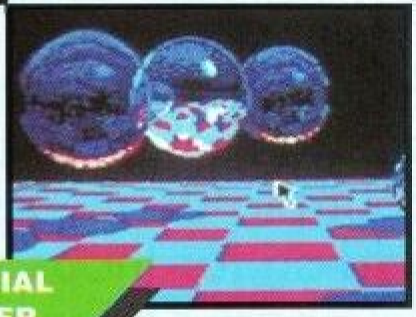
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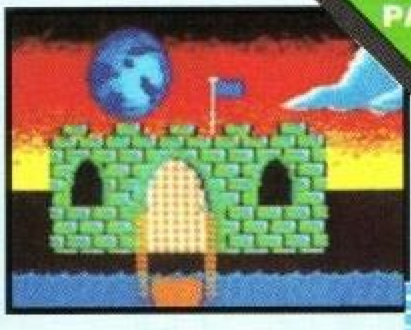
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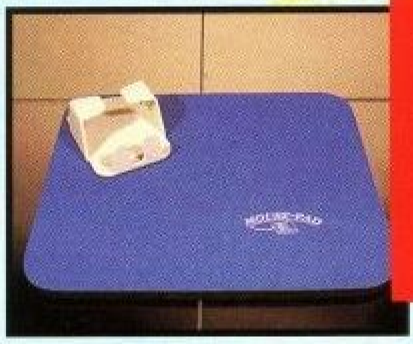
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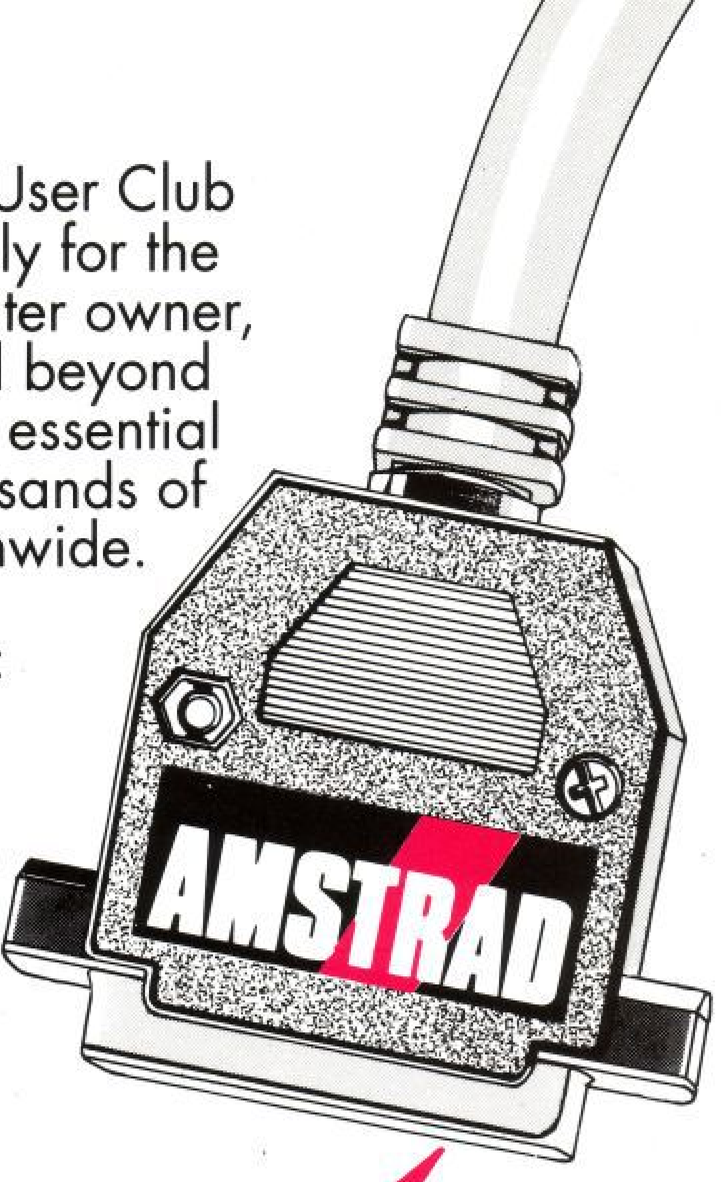
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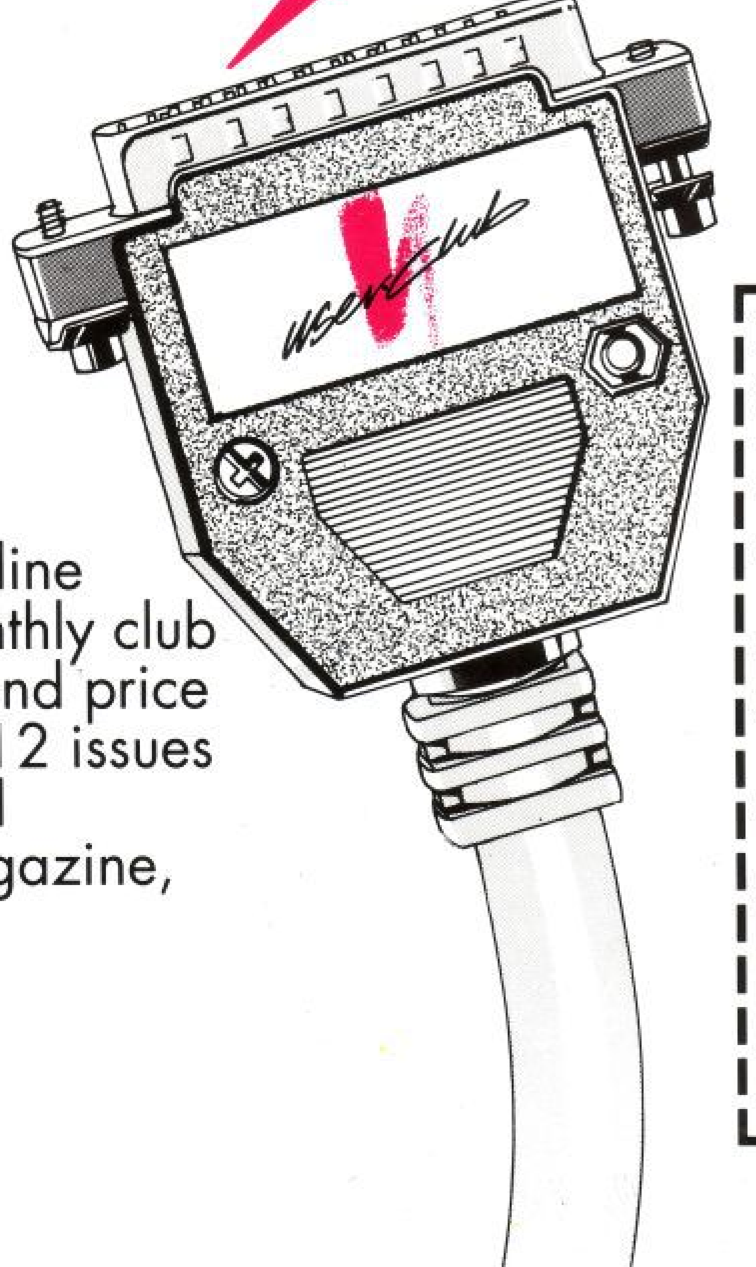
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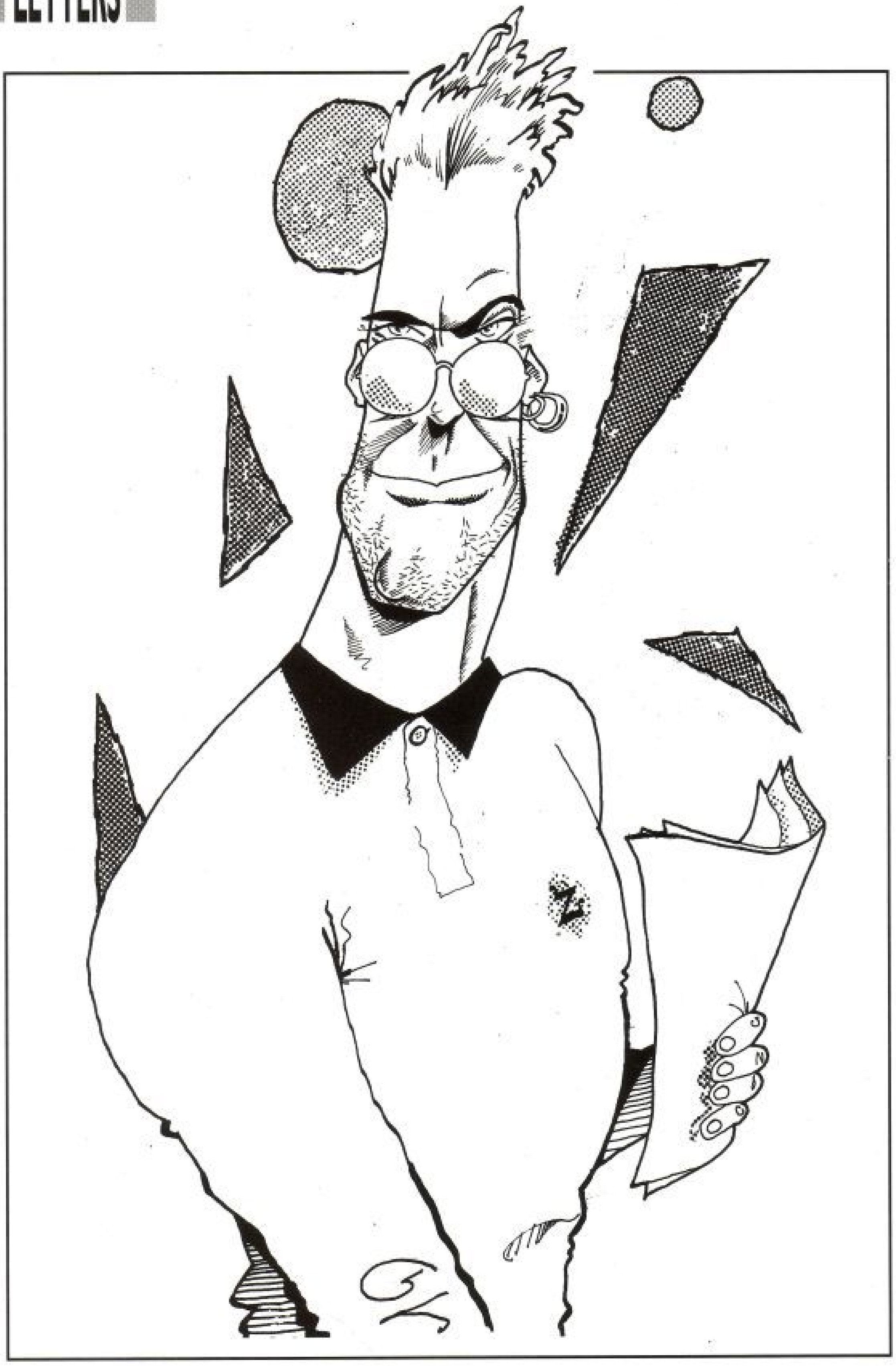
REGULARS

FEATURES

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ZIGGY'S MAILBOX

Back-up Ban

First of all your magazine is very good, but I was wondering why disc games are protected against us copying them. I think it is ridiculous because I can't copy the disc games onto a back-up disc like you can do with a C/PM systems discs. Is there any way you can help me? Also, I would like to ask if you are considering a beginners' column for people who have started on the CPC?

Tony King, Vanbrugh Crescent, Liverpool

Ziggy: The problem with disc games is that software houses are so worried about piracy, and rightly so, that each game is protected, thereby stopping any old Tom, Dick or Harry from sniping a copy of a game from a friend without paying for it. There are ways around it, but this is neither the time nor the place. A note to Hairy might help you along. As for the beginner's guide, there are plans to restart some of your earlier programming tips in a slightly different format for newcomers, without frustrating our longstanding readers.

Stop Press

Having just finished a course at Port Talbot Skill Centre, I would like to make enquiries as to get hold of a DTP programme for my computer which is a CPC 6128.

I have already made enquiries at my local computer specialist store and they do not have it in stock. They also do not know whether it exists. If this is true, then I will assume not to get a package, but if it does exist, then would you please tell me where I can get one and also let me know how much this package would cost me.

Chris Jones, Sketty Park Estate, Swansea

Ziggy: Well, the three most popular packages for the CPC are Stop Press from Database software for £49.95, you can contact them on 0625 878888; Fleet Street Editor from Mirrorsoft for £39.95, their phone number is 071 928 1545, and the cheapest is Page Publisher at £24.99 from SD Microsystems on 0462 675106. I hope that this helps a bit.

Bizz Whizz

Please can you tell me the cheapest place to get The Biz on disc and if possible, their phone number as well.

Steven Wiggins, Harden House, Cemetary Road, Hemsworth, Pontefract

Ziggy: Why not go straight to the horse's mouth, as it were, and ring Ocean on 061 832 6633. If not, maybe one of our readers may be able to help you out.

Aussia Blues

I know that this subject has been brought up time and time again, but could there be competitions in which overseas readers can enter. Being lucky enough to have relatives in the UK, I receive the mag as soon as it comes out, only to find that the competition is UK based.

Please try to do something about this as I do not want you to ruin a good magazine.

Dala White, Glen Forrest, Perth, Western Australia

Ziggy: Well, what can I say? Although we love to do things for our many overseas fans, most of our readers come from good old Blighty, so we have to keep it at home, so to speak, for prizes like days out, not to mention what it would cost to arrange a day out in Australia. However, there is nothing to stop you from entering when goodies are being given away, in fact, the more entries the merrier.

Music Maker

In February 1989's ACU you featured the DHCP Midi interface and 8 track sequencer by DHCP Electronics, the EMR Midi interface and Performer software by Electro Music Research and The Music Machine by Ram Electronics.

Because of my disability, I cannot use my fingers, and am unable to hold more than two keys down at once on the computer keyboard. At the moment I have "The Music System" by Rainbird. As you may know, with this you input the notes, flats, ties, sharps, etc., one at a time on the keyboard and the sound plays through the computer's own speaker.

I would like a music package that I can input the musical notes one at a time on the keyboard, then play the music back through a Yamaha Mini Keyboard or Synthesizer. Do you know if the DHCP Midi, the EMR Midi or the Music Machine would be suitable for my needs and which Yamaha Mini Keyboard I would need?

D. Stephens, 11 Carlton Road, South Elmsall, Pontefract, West Yorkshire

Ziggy: Having had a quick check through, I think you may be barking up the wrong tree here. The DHCP has a real time system which takes input from the keyboard on a track by track basis, but it will not do step-time. The EMR is similar, with a nice user interface but no edit note mode. Although the Music Machine has some editing facility, it is not at the high end.

To do what you're after, you may well need something a little more powerful than our faithful CPC, but I'm sure both you and I will get letters of outrage from other readers telling us it can be done and how. Can anybody out there help David?

Monster Frenzy

Help! Does anybody remember the adventure game listing printed in the April 1985 ACU for "The Monster's Final Hour"? Can anyone supply me with the missing lines 290-380?

I have just typed in the listing, having found it when searching through back copies for programs I had missed. Confident that you can always trust ACU to acknowledge and print its omissions in subsequent issues, I carried on to the end before looking for the missing lines. To my horror, the next issue admitted the boob and offered to send a printout to anyone who sent in a SAE!

So, can anyone help me – my son keeps nagging me to finish it so he can play it?

David Turner, 747 Upper Wortley Road, Thorpe Hesley, Rotherham, Yorkshire

Ziggy: Yes, well my records don't dig back that far unfortunately, but I have every confidence that someone out there has just what you are looking for. Come on readers, help out a friend in distresss.

Stop Press II

I'm very interested in the CPC Stop Press. I've already got the AMX mouse, so I obviously only require the program on its own. Which printers will it work with and how much will it cost? I'm eagerly awaiting your reply.

Henry Williams, Leckhampton, Cheltenham, Glos.

Ziggy: Stop Press should work on any Epson compatible printer and the price is around £49.95 for the package, but try ringing Database Software on 0625 878888 for more information.

Print Pal

I'm writing to you concerning software for the Amstrad CPC 464. I purchased this computer last year, but the problem is that computing this side of the world is still young and so software is not available.

My point is that I'm asking you please to send me software that you can for this computer and please if you could link me with other Amstrad users. If you have any peripherals available, a printer cable would be most appreciated.

Tennyson James, P.O. Chisipite, Harare, Zimbabwe,Africa.

Ziggy: Would any of you like a penpal in Zimbabwe? He certainly looks as if he could use some assistance software wise. Drop him a line and keep him in touch and I'm sure he would be more than grateful.

CPC Swapsies

I have a 464 and for a number of reasons I wish to swap it to a 6128. Do you know of any Amstrad services that would do this for me? If so, could you tell me how much extra it would cost to do this. I would be very grateful if this could be done.

John Magee, 9 Monaville Drive, Lisburn, Co.Antrim, N. Ireland

Ziggy: You could try the Amstrad User Club on 091 510 8787 for details on services. Alternatively, why not upgrade with a disc drive.

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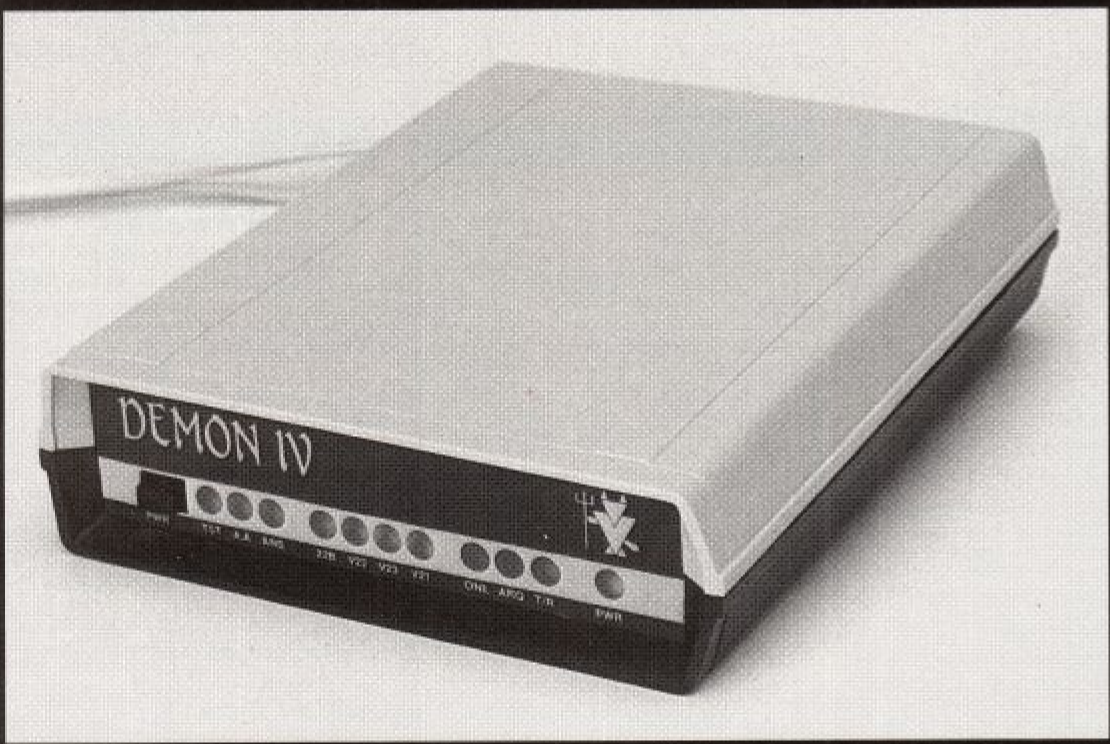
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If you have a modem already, or you're thinking of getting one, don't forget to drop in for a chat on our Focal Point on 071 828 1577. You never know, you may just bump into Ziggy while you're there.

Action stations

Hot things are afoot at Reading based Activision at the moment. Not only are they boasting the forthcoming release of Time Machine, an epic 4-D role playing arcade adventure, which will have you dashing around between past and present to save the future, but they have also just signed a licensing agreement with Twentieth Century Fox to bring those grisly monsters 'Aliens' and 'Predator' to our screens.

Under this agreement, Activision will develop 'Aliens VS. Predator', which looks set to be the ultimate in fantasy shoot-em-ups.

Activision's Chairman Bruce L. Davis summed it up by saying: "It's the ultimate match-up of the 1990's. Ask any kid to name the biggest, most frightening creatures of our time and they'll tell you these are it. Not since Godzilla versus King Kong have such widely known creatures come together in a science fiction conflict of this magnitude."

Not bad, eh? On top of all this excitement, the company's top brass also took time out in Cairo of all places to present awards to their top worldwide distribution agents.

How they find time to produce great games inbetween all of this action is a mystery.

Page prizes

Those incredibly generous people at SD Microsystems are giving away a £100 cash first prize in their quest to find the best PAGE PUBLICATION.

Whether you run a small club newsletter, or make posters for village fetes, discos, jumble sales, just about anything really, and you produced it on SD Microsystems' popular DTP program Page Publisher, you could be in for the prize.

There are also super runner up prizes for the coolest piece of clip art, the most fab font and the loveliest letterhead, each of them receiving a box of quality CF2 discs to the total of £25.

At the end of it all, the best entries will be rounded up onto a special compilation disc, available to all registered Page Publisher users to see just what can be done with their software.

To enter this fab competition, send off for a User Registration form and entry slip from SD Microsystems at P.O. Box 24, Hitchin, Herts., SG4 0AE. The competition runs until November, so you've got plenty of time to come up with something special. Get publishing.

The never ending story

This is it! Everything you wanted to know about the man who brought us the beloved CPC all bundled up into one easy to read package.

Alan Sugar: The Amstrad Story outlines Mr.Amstrad's rise from selling aerials from the back of a van in the East End at the age of 19, to become, according to Rupert Murdoch, 'probably Britain's greatest entrepreneur'.

Whatever, we certainly wouldn't be here without him, so it should be fun to have a look and see the secrets of his success. After all, if we follow his example, there could be hope for the rest of us yet.

Alan Sugar: The Amstrad Story is being published by Century and should be available at the end of July, although we'll be taking you through the main points here in ACU. To order your copy, ring Century on 071 973 9670.



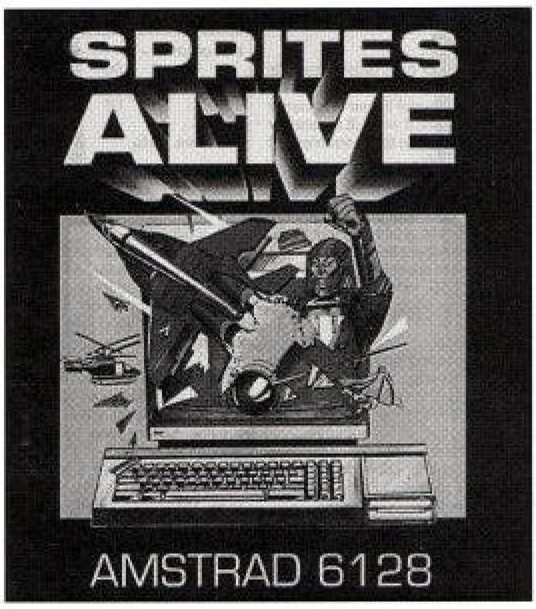
Sugary sweet

Sorry sprites

In the July issue of ACU we had a long look at the Sprites Alive Compiler Package from Glenco and, unfortunately, some of the details went a little astray.

The actual price of the compiler version of the package costs £29.95 and includes the original basic version in one box. It is not a separate package which you would have to buy on top of the basic version which retails at £24.95, so it is certainly value for money.

The Sprites Alive package, produced for an 8-bit machine, may not have as much oomph as those for the 16-bit machines, but considering the limitations of our beloved CPC, it is an excellent introduction to general purpose games writing. Apologies to Glenco and how about you readers sending us in some games produced by using the Sprites Alive package so that we can show just what it can do.





Groovy. But which one's Andrew?

Fave games

What's your favourite blast of all time? Which game do you always turn to when you're down because you know a quick level or two will put you in the right frame of mind again?

The ACU team spoke to Andrew Oliver, one half of the renowned programming team at Code Masters, to find out what he tunes into to relax from a hard day's work. His verdict? Here are just some of his faves:

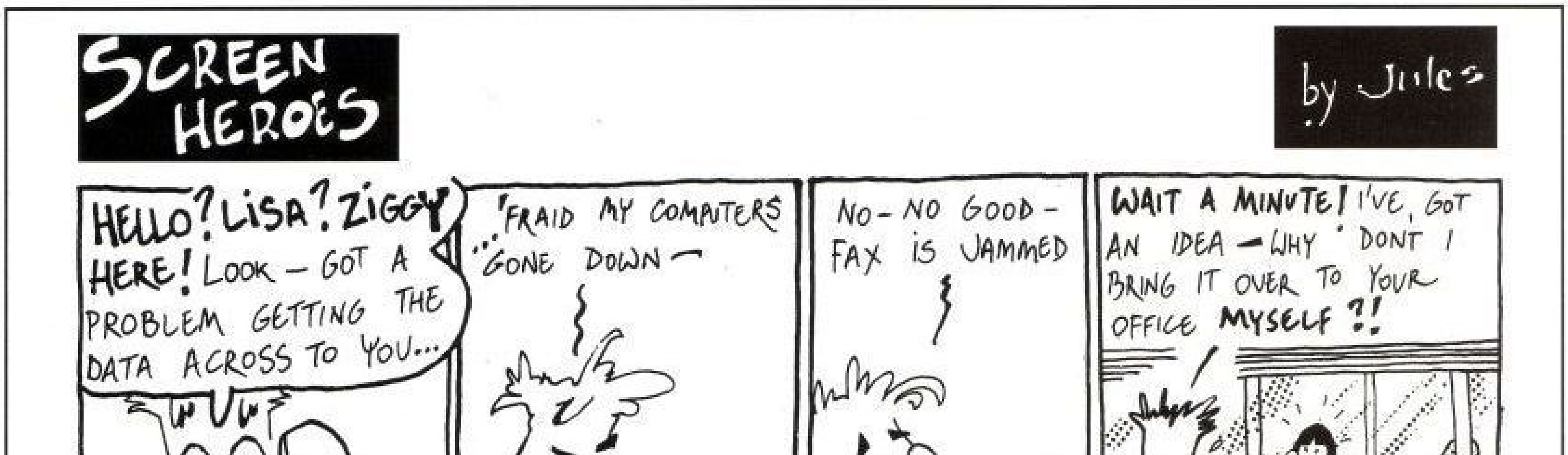
Spin Dizzy
Monty Mole
Ikari Warriors
Gauntlet
Tetris

He told us: "To be honest, when I first started programming, I didn't play a lot of games but there have been some like Tetris and Gameboy that you can spend hours playing."

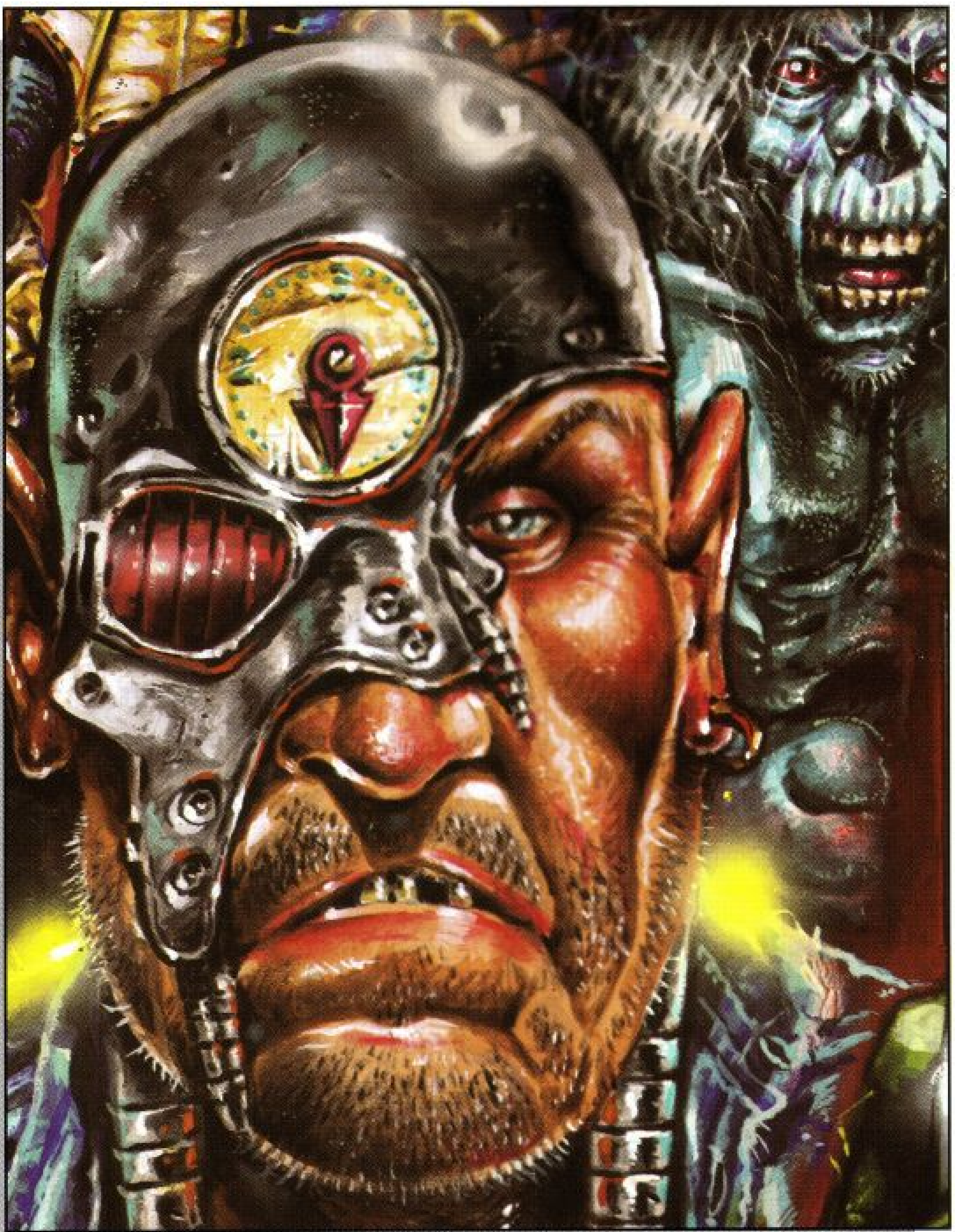
Fantasy games are among his particular favourites as he explains: "With simulators, you know what to put in when you're programming. But with fantasy games like Dizzy, you can be much more creative and put a lot of clever things in."

There's no doubting that. What are your favourite games? Send us in a list of your top ten games of the decade and we'll make sure you get a bag of goodies for the most exciting ones. We'll also print the results in ACU.

Send your entries to; Fave Games, ACU, MCM Ltd., 116-120 Goswell Road, London EC1V 7QD.



COMPETITION



Time to take the law into your own hands with some great prizes in our super Judge Dredd competition, courtesy of Virgin Mastertronic. Just answer the three simple questions below based on well-known crime fighters, and the first ten entries drawn out of the bag will be the proud owners of special Judge Dredd goodie bags, including game copies on the format of your choice, posters and a host of other delights.

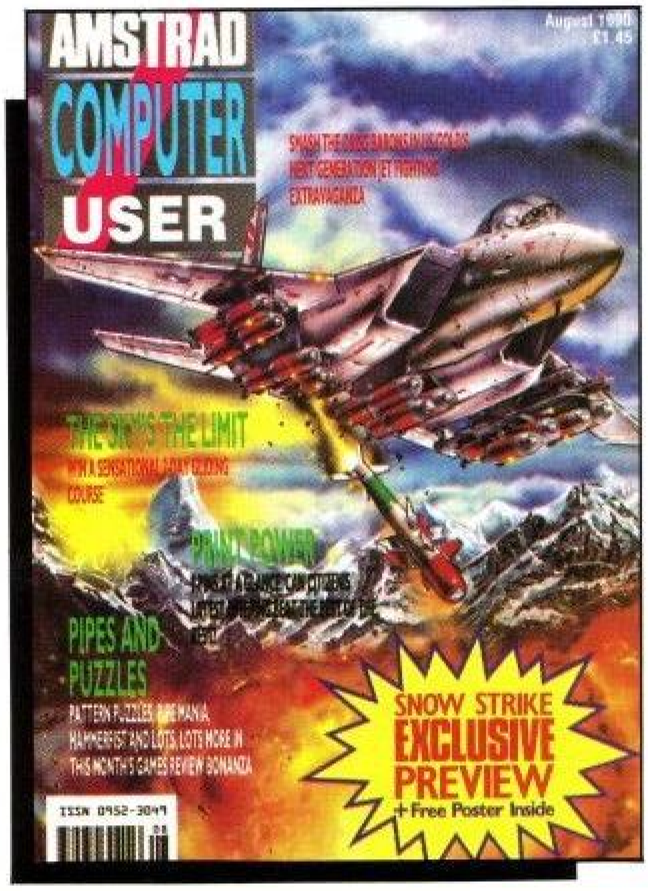
1. What does the P.I. stand for in Hawaiian based Thomas Magnum's character title?
2. Which character does Don Johnson play in Miami Vice?
3. Which author created the character of Sherlock Holmes?

Don't forget to state which format you want the game on in your entry.

The editor's decision is final. Send your entries to:

Crime Fighters,
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MCM Ltd.,
116-120 Goswell Road,
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MAZE

BY PAUL WATERMAN

You'll be amazed at this neat program. Watch carefully as the maze unfolds before your eyes, then try to retrace it with the cursor keys against time when it disappears. You'll need to be quick to reach the finishing block.

```
1 MODE 1:PRINT "MAZE by PAUL WATERMAN":PEN #1,5:PRINT "Please Wait":CALL &BC02:I
NK 4,6:INK 8,26,0:INK 9,0,26:INK 6,16:FOR a=&9000 TO &90B3:READ a$:POKE a,VAL("&
"+a$):tot=tot+VAL("&"+a$):NEXT:IF tot<>20896 THEN PRINT "ERROR in DATA":END
2 MODE 0:FOR t=1 TO 500:i%=RND*4:IF i%=1 THEN x%=0:y%=4 ELSE IF i%=2 THEN x%=0:y
%=-4 ELSE IF i%=3 THEN x%=8:y%=0 ELSE IF i%=4 THEN x%=-8:y%=0:DATA c3,67,90,c3,4
a,90,c3,2c,90,c3,0f,90,c3,85,90,06,80,21,40,c1,11,00,c0,c5,d5,01,28,00,ed,b0,e1,
cd
3 IF XPOS+x%>600 OR XPOS+x%<0 THEN x%=0:DATA 26,bc,01,40,01,54,5d,09,c1,10,ec,c9
,06,80,21,b0,fc,11,f0,fd,c5,e5,01,28,00,ed,b0,e1,cd,29,bc,01,40,01,54,5d,09,c1,e
b,10,eb,c9,21,08,c0,11,00,c0,06,a0,c5,01,20,00,d5,ed,b0,e1,cd,26,bc,01,08,00
4 IF YPOS+y%>70 OR YPOS+y%<0 THEN y%=0:DATA 54,5d,09,c1,10,ec,c9,21,1f,c0,11,27,
c0,06,a0,c5,01,20,00,e5,ed,b8,e1,cd,26,bc,01,08,00,54,5d,09,eb,c1,10,eb,c9,cd,02
,bc,3e,ff,06,01,f5,cd,4d,bc,f1,3d,20,f6,c3,14,bc,06,08,c5,21,00,c0,06,a0,1e,4f,e
5,7e,cb,3f,77
5 DRAWR x%,y%,2:NEXT:PLOTR 0,0,8:FOR tl=-10 TO 0 STEP 2:MOVE 0,tl:c=6:xr=4:yr=0:
x=XPOS:y=YPOS:xs=XPOS-12:ys=YPOS+4:lx=1:ly=1:GOSUB 9:NEXT:INK 2,1:PLOT 636,0,15:
DRAWR 0,198:MOVE 0,0:k=0:EVERY 50,1 GOSUB 10:DATA 23,1d,20,f8,e1,cd,26,bc,10,ef,
c1,10,e6,c9
6 IF INKEY(0)>-1 AND TESTR(0,2)<>0 THEN c=6:xr=4:yr=0:x=XPOS:y=YPOS:xs=XPOS-12:y
s=YPOS+4:lx=1:ly=1:GOSUB 9 ELSE MOVER 0,-2:IF INKEY(2)>-1 AND TESTR(0,-2)<>0 THE
N c=9:xr=4:yr=0:x=XPOS:y=YPOS:xs=XPOS-12:ys=YPOS-4:lx=1:ly=17:GOSUB 9 ELSE MOVER
 0,2
7 IF INKEY(1)>-1 AND TESTR(4,0)<>0 THEN c=3:xr=0:yr=2:x=XPOS:y=YPOS:xs=XPOS+8:ys
=YPOS-6:lx=9:ly=17:GOSUB 9 ELSE MOVER -4,0:IF INKEY(8)>-1 AND TESTR(-4,0)<>0 THE
N c=0:xr=0:yr=-2:x=XPOS:y=YPOS:xs=XPOS-8:ys=YPOS+6:lx=1:ly=1:GOSUB 9 ELSE MOVER
4,0
8 te=TESTR(0,0):IF te=8 THEN d=REMAIN(1):CALL &900C:PEN 5:PRINT#1,"You completed
 the   maze in: ";k/2;" seconds":PRINT 1,"Press SPACE":WHILE INKEY$<>" ":WEND:RU
N ELSE PLOTR 0,0,3:GOTO 6
9 WINDOW 5,6,9,12:PAPER 3:CLS:CALL &9000+c:MOVE xs,ys:FOR t=1 TO 5:te=TESTR(xr,y
r):WINDOW lx,lx+1,ly,ly+3:PAPER te+1:CLS:ly=ly-yr*2:lx=lx+xr/2:NEXT:PLOT -9,0,6:
MOVE 144,240:TAG:PRINT CHR$(224);:TAGOFF:MOVE x,y:RETURN
10 x1=XPOS:y1=YPOS:k=k+2:IF k=200 THEN CALL &BC02:CALL &9097:INK 2,20:PRINT#1,"S
orry you've had 100seconds !!":d=REMAIN(1):PRINT#1,"Press Space":WHILE INKEY$<>"
 ":WEND:RUN ELSE PLOT 636,200-k,0:SOUND 3,200-k,2,4:PLOT x1,y1,TEST(x1,y1):RETUR
N
```

CITY

BY LAURENCE RAPACCIOLI

In this clever graphics demo, you'll find yourself in the midst of a riverside city. Pressing the space bar will alternate between the cold light of day and the sinister shadows of darkness.

```
10 MODE 1:BORDER 0:INK 0,1:INK 1,25:INK 2,0:INK 3,2:SYMBOL 240,136,85,34,0,136,8
5,34,0:SYMBOL 241,85,34,0,136,85,34,0,136 [B0]
20 X=6:PRINT CHR$(22)CHR$(1):PEN 1:WHILE X<35 [65]
30 A=INT(RND*4)+1:B=INT(RND*8)+1:WINDOW #2,X,X+A,10-B,10:PAPER #2,2:CLS #2:WINDO
W #2,X,X+A,12,12+(B/2):PAPER #2,2:CLS #2 [21]
40 FOR N=0 TO A:FOR M=0 TO B:LOCATE X+N,10-M:PRINT CHR$(144):LOCATE X+N,12+(M/2)
:PRINT CHR$(144):NEXT M,N:X=X+A+INT(RND*3)+1:WEND:WINDOW #2,5,40,11,11:PAPER #2,
2:CLS #2:PEN 3 [54]
50 FOR N=1 TO 40:FOR M=12 TO 24:LOCATE N,M:PRINT CHR$(239+INT(RND*2)+1):NEXT M,N
:WINDOW #2,1,40,25,25:PAPER #2,2:CLS #2 [34]
60 ORIGIN -126,240:DEG:FOR A=0 TO 80 STEP 5:DRAW 190*COS(A),80*SIN(A),2:DRAWR 0,
-80*SIN(A):NEXT [28]
70 CALL &BB18:INK 0,1:GOSUB 90:INK 0,2:INK 3,11:GOSUB 90:INK 0,11:INK 1,1:INK 3,
20:GOSUB 90:INK 0,20:GOSUB 90:INK 0,25 [36]
80 CALL &BB18:INK 0,20:GOSUB 90:INK 3,20:INK 0,11:GOSUB 90:INK 3,11:INK 0,2:GOSU
B 90:INK 0,1:INK 3,2:INK 1,25:GOTO 70 [E4]
90 FOR T=1 TO 120:NEXT T:RETURN [8F]
```

SPACE AUTHS

BY ALAN SCULLY

This little spaceship shoot-em-up should keep you occupied for a while. Use the joystick to line up the sights and blast away. Alan's even managed to get a plug in for his PD library here too, the young scoundrel!

```
1 MODE 1:PRINT"SPACE AUTHS by ALAN SCULLY. (JoyStick)  119 Laurel Dr,Greenhills,
East Kilbride, Glasgow G75 9JG. (Send SAE for PD List).-ANY KEY-":CALL &BB18:x=4
00:ti=1000:sc=0:INK 0,0:BORDER 0:PRINT CHR$(23)CHR$(1);:CLS:q=320:y=200:MOVE 10,
10:LOCATE 3,3
2 PRINT "sc":LOCATE 11,3:PRINT "ti":DRAW 630,10,1:DRAW 630,390:DRAW 10,390:DRAW
10,10:LOCATE 2,2:PRINT sc:LOCATE 10,2:PRINT ti/20:MOVE x-10,y:DRAWR 20,0,1:MOVE
x,y-10:DRAWR 0,20:f=0:zd=15:td=15:z=110:t=110:TAG:MOVE z,t:PRINT CHR$(
7);:EVERY 5,1 GOSUB 8
3 TAGOFF:WHILE ti>-1:a=JOY(0):IF a=0 THEN 3 ELSE y2=y:x2=x:IF f=1 THEN f=0:PLOT
x3,y3,2
4 IF (a AND 16)=16 THEN DI:MOVE 10,y:DRAW 630,y,2:MOVE x,10:DRAW x,390:PLOT x,y,
2:x3=x:y3=y:f=1:MOVE 10,y:DRAW 630,y,2:MOVE x,10:DRAW x,390:IF (x>z-20 AND x<(z+
36)) AND (y<t+20 AND y>(t-36)) THEN INK 0,26:BORDER 26:CALL &BD19:INK
0,0:BORDER 0:s=1
5 EI:IF s=1 THEN sc=sc+1:LOCATE 2,2:PRINT sc;:s=0
6 IF ((a AND 1)=1 AND y<380) THEN y=y+20 ELSE IF ((a AND 2)=2 AND y>20) THEN y=y
-20 ELSE IF ((a AND 4)=4 AND x>40) THEN x=x-20 ELSE IF (a AND 8)=8 AND x<610 THE
N x=x+20
7 DI:MOVE x2-10,y2:DRAWR 20,0,1:MOVE x2,y2-10:DRAWR 0,20:MOVE x-10,y:DRAWR 20,0,
1:MOVE x,y-10:DRAWR 0,20:EI:WEND:PEN 3:LOCATE 3,5:PRINT"Game Over":PEN 1:WHILE I
NKEY$<>"":WEND:CALL &BB18:RUN
8 z2=z:t2=t:z=z+zd:t=t+td:IF (z>600 OR z<30) THEN zd=-zd
9 IF (t>370 OR t<40) THEN td=-td
10 ti=ti-1:PLOT -10,0,1:TAG:MOVE z2,t2:PRINT CHR$(7);:MOVE z,t:PRINT CHR$(7);:TA
GOFF:LOCATE 10,2:PRINT ti\20:RETURN 'If you want PD software then send INPUT1 +
SAE + Tape(C30) or Disk to Alan, 119 Laurel Dr, Greenhills, East Kilbr
ide, G75 9JG - Megabig Ra
```

MUSIC

BY LAURENCE RAPACCIOLI

This one's for music lovers everywhere. Run it, follow the prompts, and you have five completely different pieces of music to lull your earholes. Ranging from spooky to space rockets, it's well worth listening to.

```
10 PAPER 0:CLS:MODE 1:PEN 3:INK 0,0:PRINT "<<<<<<<<<<<<< MUSIC GALORE >>>>>>>>>
>>> By  Laurence Rapaccioli":PRINT:PRINT:PRINT:PRINT"1. RUNNING MUSIC":PRINT"2.
MYSTERIOUS Music":PRINT"3. FIRE POWER":PRINT"4. CRAZY ROCKET":PRINT"5. SPOOKY" [
C6]
20 PRINT"6. FINISH":PRINT:PEN 2:PRINT"   (DON'T ENTER A NUMBER WHILE PREVIOUS
 MUSIC IS STILL PLAYING)":PRINT:PEN 1:INPUT "Please Enter Number To Choose From"
;a:ON a GOSUB 30,40,50,60,70:IF a=6 THEN LOCATE 10,20:PEN 3:PRINT"Goodbye!":END
[99]
30 ENV 1,1,15,1,10,-1,1:ENT 1,1,15,2,1,-15,2:ENV 2,1,15,1,15,-1,70:RESTORE 80:FO
R M=1 TO 14:READ A,B:SOUND 2,B,352,13,2::FOR N=0 TO 31:SOUND 1,A,0,0,1,1,N:SOUND
 4,A+1,0,0,1:NEXT N,M:GOTO 10 [0B]
40 ENV 1,1,15,1,10,-1,15:RESTORE 90:FOR N=1 TO 26:READ A,B:SOUND 1,A,B,0,1:SOUND
 2,A+1,B,0,1:SOUND 4,A+2,B,0,1:NEXT N:GOTO 10 [2B]
50 ENT -8,15,-8,1,15,8,1:ENT -5,30,-8,4,30,8,4:ENT -1,5,-10,1,5,10,1:SOUND 2,200
,400,12,,8:SOUND 1,948,400,12,,5:SOUND 1,948,800,12,,5:SOUND 2,100,800,12,,1:SOU
ND 1,200,870,12,,8:SOUND 2,100,870,12,,5:FOR N=1 TO 14000:NEXT:GOTO 10 [BA]
60 ENT 1,31,31,1,31,-31,1:ENV 1,27,15,1,27,-15,1:FOR N=1 TO 31 STEP 2:SOUND 1,N*
10,0,0,1,1,N:NEXT N:FOR N=1 TO 25 STEP 2:SOUND 1,0,0,15,,1,N:SOUND 2,N*10,0,0,1,
1,32-N:NEXT N:GOTO 10 [4F]
70 RANDOMIZE TIME:ENV 1,1,0,1,15,1,6:ENT -1,5,3,1,5,-3,1:PRINT "Press Space To F
inish":WHILE INKEY$<>" ":SOUND 1,100+RND*450,0,0,1,1:SOUND 2,700+RND*700,0,0,1,1
:SOUND 4,750+RND*800,0,0,1,1:WEND:FOR N=1 TO 2500:NEXT:GOTO 10 [26]
80 DATA 185,250,235,310,200,250,250,185,155,235,127,200,116,185,127,200,155,185,
155,210,155,235,140,185,130,185,125,200 [77]
90 DATA 150,0,150,20,140,20,125,40,150,20,190,40,150,60,170,0,170,20,150,20,140,
40,150,20,170,35,170,0,170,20,150,20,140,40,150,20,170,40,170,60,190,0,150,20,14
0,20,125,40,150,20,190,35 [E3]
```

FILE

BY S. MCCULLY

It's been done before but Mr McCully reckons he can do it better without causing any corruption. Type this in and use it to cat your discs. You'll then be asked which one you want to look at. Run it and you're away. Very tidy.

```
10 CLS:MODE 2: LOCATE 24,2:PRINT"DISC MENU (c) S.McCULLY  1990
20 LOCATE 24,4:PRINT"  PRESS SPACE TO CAT DISC"
30 a$=INKEY$:IF a$<>" " THEN 30:IF a$=" " THEN |DIR
40 LOCATE 24,2:PRINT"DISC MENU (c) S.McCULLY  1990
50 LOCATE 24,4:PRINT"                                       "
60 filename$=filename$+"    .bas"
70 LOCATE 20,20:INPUT"ENTER FILENAME TO LOAD ";filename$
80 WHILE a$="":WEND
90 CLS:MODE 1:LOCATE 10,10:PRINT"LOADING ";filename$
100 IF INSTR(filename$,".bin") THEN LOAD filename$ ELSE RUN filename$
```

CONVERT

BY CHRIS WOOTTON

You nippers have got it lucky. Compared to the old imperial measures, the metric system is a doddle. With this converter, you can swap and change between metric and imperial and see just how well they measure up.

```
1 ' Metric/Imperial Conversion [71]
2 ' by Chris Wootton [72]
3 ' [73]
10 MODE 1:FOR a=0 TO 10:READ m$(a),k$(a),c(a):PRINT TAB(4)a*2+1 TAB(8); [0F]
20 PRINT ": "m$(a)" to "k$(a):PRINT TAB(4)a*2+2 TAB(8)": "k$(a)" to "m$(a) [C3]
30 NEXT:PRINT:INPUT"  Enter your choice (1-22) ",q:x=(q-1) MOD 2:q=(q-1)\2 [2C]
40 CLS:r=1/c(q):IF x THEN w$=k$(q):q$=m$(q):r=c(q) ELSE w$=m$(q):q$=k$(q) [35]
50 PRINT"Enter the number of ";w$:INPUT"",an:PRINT"That equals"an*r;q$:END [14]
60 DATA Kilometres,Miles,1.60934,Metres,Yards,0.9144,Metres,Feet,0.3048 [0C]
70 DATA Centimetres,Inches,2.54,Litres,Pints,0.5683,Litres,Gallons,4.5461 [58]
80 DATA Cubic Feet,Cubic Metres,0.0283168,Cubic Yards,Cubic Metres,0.76455 [E7]
90 DATA Kilograms,Pounds,0.45359,Kilograms,Tons,1016.047,Kilos,Stones,6.3 [FF]
```

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Altered Beast	4.99	7.99
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Colossus Chess 4	7.99	11.99
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UTILITIES

	CASS	DISC
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Protext	14.99	19.99
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Hisoft C	37.99	37.999
Hisoft Denpac 80	N/A	37.99
Hisoft Knife Plus	N/A	14.99
Hisoft Forth	N/A	14.99
Tascopy	10.99	10.99
Tasword 464/6128	18.99	22.99
Prospell	N/A	18.99
Masterfile 3	N/A	29.99
Tas-Spell	N/A	14.99

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Please note that the majority of the forthcoming attractions are not released at the time of going to press. These will be despatched within 24 hours of release subject to availability.

EDUCATIONAL

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Fun School II 6-8	6.99	9.50
Fun School II ++	6.99	9.50
French Mistress A+B	N/A	15.99
General Science	N/A	7.99
Magic Maths 4-8	8.99	13.99
Spelling	N/A	7.99
Three Bears	N/A	14.50
World Wise	7.99	10.99

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	CASS	DISC
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Afterburner	14.99	5.99
Ballbreaker I or II	14.99	3.99
Bards Tale I	14.99	6.99
Blasteroids	14.99	3.99
Beyond The Ice Palace	14.99	3.99
Colossus Mah Jong	14.99	6.99
Dark Sceptre	14.99	4.99
Fair Means or Foul	14.99	5.99
Firezone	14.99	4.99
F/Ball Manager II + Exp Kit	14.99	8.99
Cyrus 2 Chess	14.99	6.99
Galactic Games	14.99	4.99
Galaxy Force	14.99	6.99
Gryzor	14.99	4.99
Hunt for Red October	19.99	8.99
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Ikari Warriors	14.99	6.99
Knightmare	14.99	4.99
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BrunWord

Complete Word Processing Package £30

BrunWord 6128 is a complete word processing package consisting of three programmes, a word processor, a spelling checker and a card filing programme. It is written to run on a standard unexpanded CPC6128 (or CPC464 + disc + 64K) and is optimised for use with a single disc drive. The latest version was released in October 1988 and out performs any other word processor for the CPC6128.

The programme has three screen modes 40, 80 and 128 columns that are automatically selected according to the right margin setting. We take the view that it is not possible to read a paragraph if it goes off the screen sideways, so BrunWord 6128 has a unique 128 column mode for the wider text. The mode can be changed any time simply by using <CTRL> R to set the right margin. The cursor will remain on the same word after the change. Children often prefer to type in using the easy to read 40 column mode and then to print out using the 80 column mode.

Manipulating the text can be great fun as it is possible to move the temporary margins while watching the effect as it happens on the screen. This also has the important use of allowing a block of text to be easily adjusted to its best shape.

Most word processors have a simple justification system that either makes the middle bulge or the text lopsided. BrunWord has a superb system where spaces are added after punctuation and then between words alternating left and right towards the centre of the line. This gives the text a pleasing balanced appearance.

Marked text is shown clearly in inverted video and can be moved, copied, deleted or saved as a memory file. Memory Files are another powerful feature of BrunWord. Often when making severe changes to a piece of text, it is necessary to save sections for possible use later or for adding to another file. Normally this would involve saving these to the disc with the difficulty of using a name which makes the content obvious. This results in the disc becoming congested with small files that later need to be examined and possibly deleted. BrunWord allows a number of small files to be stored in memory and these can be saved to the disc along with the main file (under the same name) or left in the memory for adding to another file.

Printing

This paragraph shows the various printer facilities that do not affect the general format of a paragraph. For example underline is simple and so is *italics*. $y=ax^2+bx^3$ or $Note_6$ present no difficulty. **Emphasised,** double strike and NLQ can also be used without upsetting the justification.

E n l a r g e d   m o d e   i s *p o s s i b l e* b u t   a   l i t t l e p l a n n i n g   i s   n e e d e d   a n d the same applies to condensed printing.

Spelling Checker

The integrated spelling checker of BrunWord 6128 and its 30,000 word dictionary load at the same time as the main programme. We invented a special system to compact the dictionary so much that each word is represented by just one and a half characters. Each group of words had to be given the correct group ending and typed in by hand, taking one 'man' six months to complete. With such a compact dictionary, we are able to store this in the 64K of banked memory, making access very convenient and exceptionally fast.

Our closest rival claimed that their spelling checker achieves 'up to 2000 words per minute'. Our tests, published at the October 88 Amstrad show, revealed that its average speed for a file of 3366 words was only 526 words per minute and much more to our surprise, that it required eight changes of the disc to complete the spelling test. Our spelling checker, BrunSpell, achieved 3883 words per minute for exactly the same test (7 times faster!) and needed no disc in the drive. Remember that all other word processors need to load the dictionary from disc during the spelling test, even the so called ROM versions.

The Reference

There are times that a spelling error creates a valid word and we have given an unusual amount of effort to this problem. We have tried to leave out uncommon words that are likely to confuse and have included only the most up to date English spellings. The Oxford dictionary was our main reference but at times we had to take a consensus from several good quality magazines and newspapers.

It is very important only to add words to the dictionary that really are needed and here BrunSpell scores a triumph. As the dictionary is memory resident, it is possible to save peculiar words and abbreviations to the memory, to form a temporary working dictionary which is NOT saved to the disc. Each day you are reminded that these words are not up to your reference level but they only need to be saved once each working secession.

If a strange word is regularly used then this can be saved permanently to the disc. The supplied dictionary occupies 49K of the available 64K and it would be possible to add another 15,000 words if these fitted in perfectly. In reality you are likely to be limited to about 35,000 words in total.

Help and Transfer

Suppose that necessary is misspelt as 'necesery'. The spelling checker will stop with NECESERY displayed at the bottom left of the screen in large letters. Press H for Help and in less than a second a list of three words will appear on the screen:-

NECESSITY   NECESSARILY   NECESSARY

The spelling error can now be automatically corrected using one of the three words by stepping through the list to the right word and then pressing T for Transfer. The word will be corrected in a fraction of a second, keeping the first letter the same case as the original word.

The help routine has two levels of search. The first is quite rigorous while the second search takes a broader spectrum of possibilities and would normally be able to correct a severe error that is only vaguely similar to the word.

For example NACSERIY produces no words on the first search but takes just six seconds to list 11 words in the second search:-

NAUSEATING	NECESSITY
NECESSITATE	NECESSARILY
NECESSITATES	NECESSARY
NECESSITATED	NESCIENT
NECESSITATING	NESCIENCE
NECESSITIES	

The first search restricts the length of the suggested words. The second search will offer any words where the first part has a similar pattern to the incorrect word and this can be used to list all the words with a particular stem.

The First Step

BrunWord has a 40 page manual which has several detailed examples, starting with step by step instructions to produce and print a simple letter. But your very first step is to load the TUTOR file into BrunWord. This takes even the complete novice straight into word processing and demonstrates the powerful editing and formatting features of BrunWord. There are also examples of printer control, showing how to create headings, to underline or to emphasise, and five deliberate spelling errors for you to correct. The tutor takes about 20 minutes to run through and after that you will feel confident to type in your own text.

BrunWord Features

*40, 80 or 128 column display. *Touch typing speed over 200 words/min. *True insert or overwrite. *Justify or unjustify paragraph or whole text. *Justified text has balanced appearance. *Instant word wrap. *Block save, move, copy, insert and delete. *Local editing with word delete/undelete. *Adjustable margins and TABs. *Column/Line/Page display with file name. *True word count. *Find and replace. *Help menus. *Memory filing system. *Single character embedded printer commands (18 with 3 printer codes and 21 with 10 printer codes). *Page throw markers. *Multiple copies. *Odd/even page headers/footers with page numbers. *Multi file printing (new page or continuous). *Print specified pages. *Works with any printer. *True display superscript and subscript numbers. *User defined print characters. *Load ASCII files from other word processors. *Save ASCII files for other word processors. *Files can be encrypted. *Maximum file size about 9 pages of text.

BrunSpell Features

*Memory resident with word processor. *Checks 4,000 words/min. *30,000 word dictionary. *No American spellings. *Add up to 5,000 of your own words. *Instant lookup. *Helps to find correct spelling. *Automatic correction.

DataFile Features

*Alphabetical, numerical, date sorting on any field. *User defined headings. *Search routine. *Data merging into BrunWord. *Label printing.

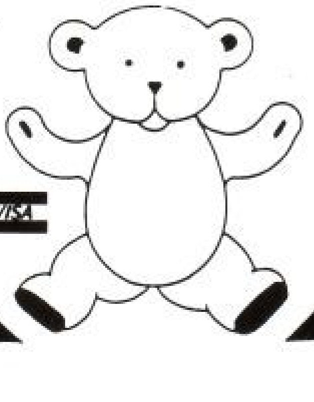
Info-Script £50

The complete data processing package, including all the features of the BrunWord 6128 package.

Free Booklet

Our 16 page booklet explains all about our programmes, starting with BrunWord 6128 and going on to Info-Script and BrunWord Elite. To get your copy, simply write your name and address clearly on a piece of paper and send in an envelope to 'BrunWord & Printer', Brunning Software, at the address below.

Send cheque/PO/Access number/Visa number to:



Brunning Software
34 Helston Road,
Chelmsford, Essex, CM1 5JF
Telephone (0245) 252854 (24 Hours)

BrunWord 6128 with BrunSpell & DataFile. . . £30.00
Info-Script 6128 with BrunWord & BrunSpell. . £50.00
BrunWord Elite 6128, Info-Script & BrunSpell. . £90.00
100 Letters (needs Info-Script). £15.00
BrunWord Elite and Info-Script include backup disc.
(All supplied on 3in Disc - state which computer)

All prices are inclusive for UK. Overseas orders sent insured air mail - Europe add £2.50 : Rest add £7.50

Headline

with

BrunWord Elite

The Elite System for 9 Pin Printers £69

When BrunWord Elite is used with Headline, it is possible to achieve the same resolution from an ordinary 9 pin printer as normally only possible from a good 24 pin printer. We cannot change the actual dot size as this is governed by the thickness of the pins in the print head, what happens is that the 9 pin printer produces larger text when it is driven with a 24 pin font.

This is a terrific advantage in its own right as the normal type face of a dot matrix printer is a little on the small side. When Headline is used with printers with a poor type face (such as the DMP2160), you will think you have a different machine.

24 Pin Fonts

Study the text in this paragraph. The letters are very clean with good descenders. What you see is our favourite 24 pin font 'Fineline' just as if it had been printed on a 24 pin printer but it was printed using a 9 pin printer.

When a 24 pin font is printed using a 9 pin printer, it comes out about 50% bigger but with the same resolution as if it had been printed on a 24 pin printer. So, if we reduce it back to its natural size using a photocopier, we end up with characters that are the same size and quality as produced by a 24 pin printer.

To help understand this, study our advertisement on the opposite page. That was printed from BrunWord Elite using a 24 pin printer. The original is A3 size and it was photographically reduced to A4. The final result, with the combination of 24 pins and A3 to A4 reduction, gives a quality that is comparable to a laser printer.

This page was printed using an ordinary 9 pin printer (Star LC10). The printing was done in two parts so that we are able to create a master that is 50% bigger. (We assume that most CPC users don't have a wide carriage 9 pin printer so we apply the same limitation to ourselves). The two parts were pasted together and then photographically reduced to A4. The final quality, as you can see, is indistinguisable from a 24 pin printer. Any Epson compatible 9 pin printer with quad graphics could have been used!

The very large word 'Headline' at the top of this page was also printed directly from the programme in our 'Comput' font, using 7 times width and 8 times height. That is something that cannot be done normally on any 9 or 24 pin printer. Now look at the 'BrunWord Elite' just beneith the main heading. That was printed in the same font using 3 times width and 2 times height.

Our name and address at the bottom is printed in our 'Finetype' font using normal and double size.

Star LC10

The Star LC10 is a good choice to print this page as it can be left to perform the task without human intervention. A printer without reverse line feed such as the Amstrad DMP2160 will produce an identical page but needs an occasional helping hand during the printing process. (The BrunWord teddy and the thick bottom line were not printed). A page with this complexity of layout cannot be achieved without resetting the paper during the process, so for printers without reverse line feed, the programme will stop at critical points, and request the paper to be reset to the top of the page. It will then wind on the paper to the exact position that is needed.

The Power

Headline has some powerful features. As you can see, these columns have true micro justification. The space between letters is adjusted to give the column an even right margin, rather than the space between words. Single, double, or 8 times height can be used and the width can be expanded from normal width to 2 times, 3 times, 4 times, 5 times... up to 9 times! The programme can even automatically adjust the width to the maximum possible for a particular column. This is very useful with headings. Set double height and nine times width, then let the programme give you the widest heading possible.

Add to these features most of the power of BrunWord Elite (lines, boxes, columns, page layouts like this advertisement....) and you can almost feel the ground shake!!

Multi-Strike

Another feature of Headline is designed to overcome faint printing which is often a problem with 9 pin printers. Headline can multi-strike up to 9 times. This advertisement used double strike on a nearly new ribbon but it is possible to squeeze black printing out of quite an old ribbon.

Where's the Catch

Headline sounds almost too good to be true and you might be forgiven for thinking that we don't use our 24 pin printers any more. Sorry! the 24 pin is still our strong favourite but then we run our business using BrunWord Elite on the CPC6128 and speed is important. In general terms Headline allows BrunWord Elite to perform most of its functions using a 9 pin printer and adds some very exciting extra features. However, you must accept that a 9 pin printer can take 3 or 4 times longer for the same operation and that's not a bad price for being able to pretend that it's a 24 pin printer.

Finally, if you own a 24 pin printer then you need the standard BrunWord Elite (£90) but you can also buy Headline (£21) and have an amazing choice of print sizes.

For £69.00

The Elite system for 9 pin printers consists of BrunWord Elite with a backup copy, Headline, BrunSpell, a printer lead, 8 bit printer status port and 7 'type setting' fonts (fonts are 24 pin in size but only for 9 pin printers). Total price £69.00 inclusive.

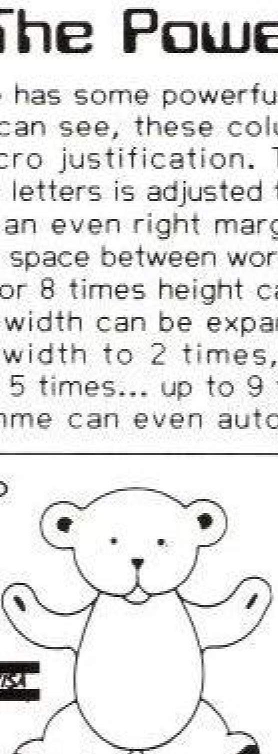
For £99.00

The Elite system as above but also including Info-Script, total price £99.00 inclusive.

Send cheque/PO/Access/Visa number to

Brunning Software

34 Helston Road
Chelmsford, Essex, CM1 5JF.
Telephone 0245 252854



Headline (needs BrunWord Elite).... £21
BrunWord Elite, Headline, BrunSpell.. £69
Elite, Headline, BrunSpell, Info-Script. £99
(All supplied on 3 in disc)

For CPC6128 (or CPC464 + disc + 64K).
Europe add £2.50 : Rest add £7.50.

ROM-With a View

Master Nick Hutton takes a walk around the internals of the CPC.



We all know what Arnold looks like outside...

Have you ever wondered exactly what is in your CPC? Unlike most of the more expensive computers, the Operating System or BASIC of the CPC is waiting for you when you switch on. There is no need to insert a Boot disk every time you power up, so the BASIC must be on a chip or ROM.

Wouldn't it be interesting to see just what is on that chip?, oh well in that case I won't bother.

No seriously, it can be very helpful to see how the ROM is made up. Still don't believe me? Have a look at this:

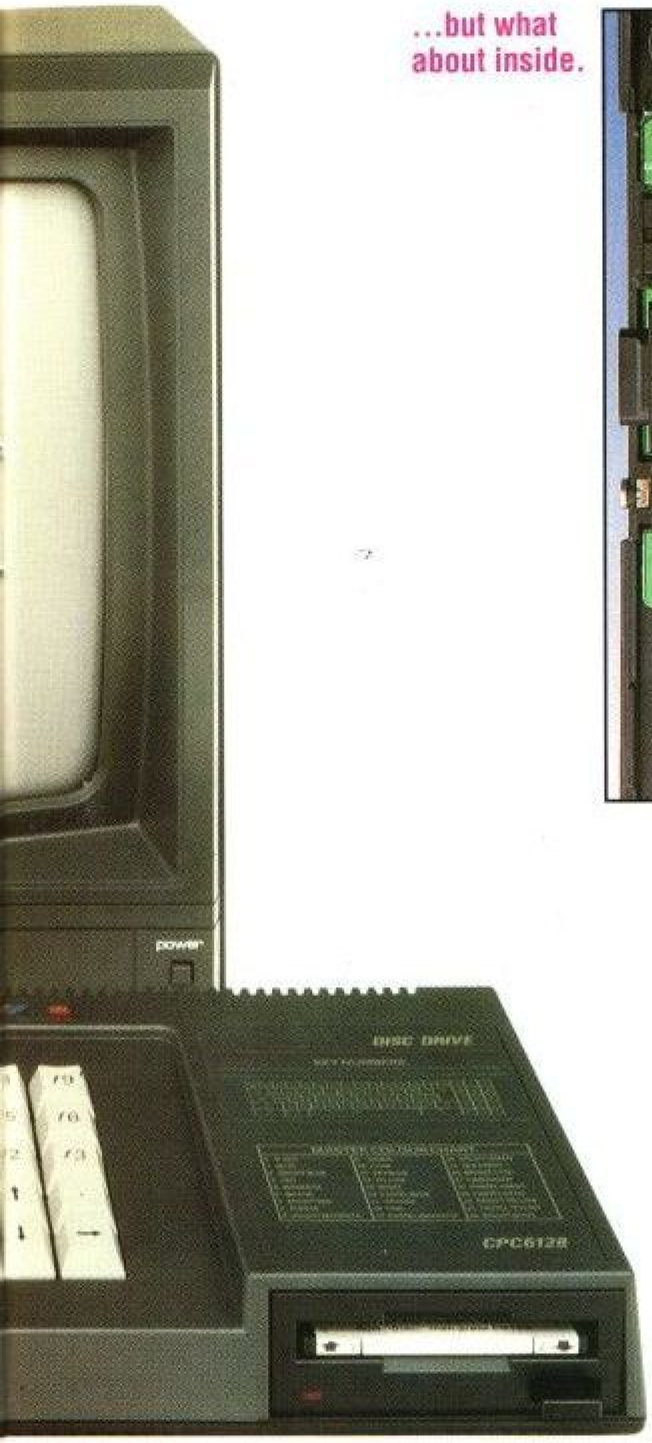
```
10 FOR t=&9000 to &900A: READ
   A$:POKE t, VAL ("&"+a$)
20 NEXT: CALL &9000: a-PEEK
   (&900A): PRINT a
30 DATA 0e, 00, cd, 15, b9, 7c, 32, 0a,
   90, c9, 00
```

Here's the DATA statement in Z80 mnemonics.

```
LD C&00          ; Address of the ROM
                   wewant to look at
CALL & B915      ;The ROM routine
                   which does
                   the checking up
LD A,Hs          ;Hold the version
                   number in A, not
                   the type number
LD (&900A),A     ;Insert the version
                   number at &900A
RET              ;Back to BASIC
```

This short program will print a 0 to the screen if your machine is a 464, a 1 if it is a 664, and a 2 if it is a 6128. how does it know? It checks up on the ROM to see which version is installed. The outcome of the check is a couple of numbers generated by the ROM routine at &B915. We then extract the version number, this number is poked into location &900A. A simple peek will then give the ROM version number.

This is just one example, but being able to look at the ROM often comes in



...but what about inside.



handy. My program will allow you to view the contents of ROM in either ASCII (text) or Hexidecimal (numerical) format.

To put the program to proper use you must first understand a little about how the ROM is arranged in the Amstrad. Basically it is split into two parts.

1. The Lower ROM, which contains the various control routines, maths routines and handles character generation. It is also home to the Kernel and Jumpblock among other important routines. The Lower ROM is the heart of the machine.

2. The Upper ROM. This section of ROM contains the BASIC interpreter and keyword handling routines, for example the address &C8CB holds the "ON BREAK" routine. This part of ROM could be termed as the brain of your machine.

By the way CPC ROMS come in three flavours:

464 40009 (bon)
664 or 40022 (savourex)
6128 or 40025 (delicieux)

Now you know about ROMS I'll move on to the workings of my listing. Like my previous programming efforts you are given a menu to choose from. It isn't quite "a la carte" but it beats typing in separate commands yourself.

Option 1 allows you to specify where the piece of ROM being viewed will appear. At the prompt "Enter Output Device" you are asked by the program

Continued on page 22

List of useful firmware calls:
Calling these addresses will have the following effect.

```
&BB18        ;Wait for a key to be pressed
&BBFF        ;Reset INK, MODE and BORDER colours
&BCB6        ;Kills all sound immediately
&BCB9        ;Restarts the sound again
&BC14        ;Clears the screen
&BC6E        ;Turns the tape motor on
&BC71        ;Turns the tape motor off
```

Here are the ROM reading DATA statements in mnemonic form:

Reading the LOWER ROM

```
DI           ;Disable any interrupts
CALL &B906   ;We want to look at the LOWER ROM
LD HL,&0000  ;Where it starts
LD DE,&6000  ;A running total, connected with the LDIR bit
LD BC,& 3FFF ;How much do we want to read
LDIR         ;Keep reading until we've finished
RET          ;Back to BASIC
```

Reading the UPPER ROM

```
DI           ;Disable any interrupts
CALL &B900   ;We want to look at the UPPER ROM
LD HL,&C000  ;Where it starts
LD DE,&6000  ;A running total, connected with the LDIR bit
LD BC,&3FFF  ;How much we want to read
LDIR         ;Keep reading until we're finished
RET          ;Back to BASIC
```

Continued from page 21

where to put all the information it is about to read. Enter 0 if you want it to appear on screen or 8 if you want the contents of ROM to be directed to printer. Please ensure that option 1 is set before you start to look at the ROM as my program assumes the information should go to the screen if no value is specified.

Option 2 is the first of the actual ROM dumping routines and it displays the contents of the Lower ROM in ASCII format. The Lower ROM actually starts at &0000 and finishes at &3FFF. If at any point during the reading of ROM you wish to stop the program then just press ESCAPE twice and run the listing again. Remember to reselect option 1 if you want to change the output from screen before choosing another option. Option 2 will be helpful if you are looking for a message located in the Lower ROM, like the "Welcome" or copyrite text.

Option 3 lets you look at the same area of memory but presents the data in Hexidecimal format.

Option 4 will show you the Upper ROM in ASCII format. This subroutine could be useful if you are looking for the position in memory of a particular BASIC keyword or routine. The Upper ROM begins at &C000 and finishes at &FFFF in memory.

As with the other ROM dumping routines this one can be displayed in either ASCII or Hexidecimal (option 5) format.

Selecting number 6 from the menu will reset the computer and subsequently all programs in memory will be lost.

As it stands the program can dump the contents of ROM to either screen or printer, but with a little effort and the addition of a few "OPENOUT" and "PRINT#9" commands it is possible to put the contents of ROM onto Disk, or Tape, if you so wish.

I have included a short list of useful calls which should come in handy in many a BASIC program. Also you will find the data statements used in the program in their original form (mnemonic).

I hope you'll find investigating the ROM interesting, and who knows, perhaps even useful!

ROMDUMP by Nick Hutton

```
10 CLEAR:CLS:MODE 2
20 PAPER 3:CLS:INK 0,0:INK 1,26
30 INK 2,0:INK 3,26:BORDER 26:PEN 0
40 PRINT TAB(14);"ROM Dump"
50 PRINT
60 PRINT TAB(7);"Created by Nick Hutton"
70 WINDOW #1,5,29,4,11:PAPER#1,2:CLS#1:
80 WINDOW #2,6,30,5,12:PAPER#2, 0:CLS#2:
90 PRINT #2,"1..Output select"
100 PRINT #2,"2..Lower ROM ASCII"
110 PRINT #2,"3..Lower ROM HEX"
120 PRINT #2,"4..Upper ROM ASCII"
130 PRINT #2,"5..Upper ROM HEX"
140 PRINT #2,"6..Abort System"
150 WINDOW SWAP 0,3
160 LOCATE 9,15
170 PEN 0:PAPER 1
180 INPUT "Enter option (1-6)";opt%
190 PAPER 0
200 INK 0,0:INK 1,26:PAPER 1:PEN 0
210 ON opt% GOSUB 230,250,410,580,740,910
220 IF opt%>=1 OR opt%<=5 THEN GOTO 220
230 INPUT"Enter output device ",g
240 GOTO 20
250 PRINT "Lower ASCII "
260 MEMORY &6000
270 FOR i=&A000 TO &A010
280 READ a$
290 POKE i,VAL("&h"+a$)
300 NEXT i
310 DATA f3,cd,06,b9,21,00,00,11,00,60,01,ff,3f,ed,b0,c9
320 DATA 00
330 CALL &A000
340 FOR i=&6000 TO 40960
350 IF INT(i/64)*64=i THEN PRINT #g,"":PRINT #g,HEX$(i-&6000);" ";
360 a=PEEK(i)
370 IF (a>31 AND a<127) OR a>159 THEN PRINT #g,CHR$(a);ELSE PRINT #g,".";
380 NEXT i
390 CALL &BB18
400 GOTO 10
410 PRINT "Lower HEX "
420 MEMORY &6000
430 FOR i=&A000 TO &A010
440 READ a$
450 POKE i,VAL("&h"+a$)
460 NEXT i
470 DATA f3,cd,06,b9,21,00,00,11,00,60,01,ff,3f,ed,b0,c9
480 DATA 00
490 CALL &A000
500 FOR i=&6000 TO 40960
510 IF INT(i/16)*16=i THEN PRINT #g,"":PRINT #g,HEX$(i-&6000);" ";
520 a=PEEK(i)
530 a$=RIGHT$("00"+HEX$(a),2)
540 PRINT #g,a$;"  ";
550 NEXT i
560 CALL &BB18
570 GOTO 10
580 PRINT "Upper ASCII"
590 MEMORY &6000
600 FOR i=&A000 TO &A010
610 READ a$
620 POKE i,VAL("&h"+a$)
630 NEXT i
640 DATA f3,cd,00,b9,21,00,c0,11,00,60,01,ff,3f,ed,b0,c9
650 DATA 00
660 CALL &A000
670 FOR i=&6000 TO 40960
680 IF INT(i/64)*64=i THEN PRINT #g,"":PRINT #g,HEX$(i-&6000);" ";
690 a=PEEK(i)
700 IF (a>31 AND a<127) OR a>159 THEN PRINT #g,CHR$(a);ELSE PRINT #g,".";
710 NEXT i
720 CALL &BB18
730 GOTO 10
740 PRINT "Upper HEX"
750 MEMORY &6000
760 FOR i=&A000 TO &A010
770 READ a$
780 POKE i,VAL("&h"+a$)
790 NEXT i
800 DATA f3,cd,00,b9,21,00,c0,11,00,60,01,ff,3f,ed,b0,c9
810 DATA 00
820 CALL &A000
830 FOR i=&6000 TO 40960
840 IF INT(i/16)*16=i THEN PRINT #g,"":PRINT #g,HEX$(i-&6000);" ";
850 a=PEEK(i)
860 a$=RIGHT$("00"+HEX$(a),2)
870 PRINT #g,a$;"  ";
880 NEXT i
890 CALL &BB18
900 GOTO 10
910 CALL &BB18:|BASIC
```

COMBAT ZONE

Join in as John Cook prowls around the plethora of mid-season releases

The arcade scene exploded with a bunch of mid-season releases this month – and by golly, some of them are good enough to warrant not a little investment by the punters. Even at this moment, piggy banks all around the country are quaking in their trotters.

First off, there's something that will have no trouble whatsoever converting onto the CPC and that's Columns, from the giant Jananese mega-corp, Sega.

Now, there have been a fair number of Tetris style games released over the past couple of years – in fact almost every man and his dog has had a go at producing a puzzle/arcade game that might just hit as big as the original Russian brain-teaser. Trouble is, most of these have been dire in the extreme.

Enter Columns. Looking at the familiar U-Shaped playfield and the succession of shapes that are falling down from the top of the screen, you might be forgiven for groaning loudly and holding the head in the hands. Not another one, eh?

Wrong! Columns, sure enough, has been artistically inspired by Tetris – in that if Tetris had never existed then Columns probably wouldn't have ever existed. Columns probably wouldn't have ever been invented either – but it's a genuinely new variation on that theme, relying on manipulation of sequences of colour rather than manipulation of shape.

3 by 1 shapes – this one type only ever appears - fall from the top of the screen, Tetris style, which you can move left/right within the playfield as it falls towards the bottom. Press the fire button and does the shape rotate? No. But the sequence of coloured squares that make up that 3x1 shape changes. Say it was Red/Blue/Green, counting from the top of the screen.





Now it's Green/Red/Blue. Press fire again and it's Blue/Green/Red. One more time and it's back to the original sequence, Red/Blue/Green.

What you have to do is try and move the shapes and alter the sequences, so you create series of three or more identical colours in a row – any direction; vertical, horizontal or diagonal. When this happens, those identical colours disappear (like a whole line across in Tetris) and anything piled up on top, moves down to inhabit those vacant places. Which may well create another line that disappears, etc, etc.

If you fail miserably and the shapes reach the top of the screen, then it's game over. That's Columns, then. it's a fine idea – but you can't help feeling that a little more play testing and tweaking around with the basic concepts in the game would have made it a better product. Still, even as it is, anyone that enjoyed playing Klax – but felt it was a bit too much for a mortal brain to contend with – Columns is of a similar ilk and a little easier to get to grips with. Enjoy.

I'm Bad. Honest. So's Michael Jackson – that and a few other adjectives. Still, undeniably, this music biz global phenomenon can knock out the odd tune and has sold one or two records in his time. But does anyone remember the Jackson inspired computer game, Moonwalker?Terrible wasn't it – but lo and behold, here is a coin-op of the same name before us. Prepare to run a mile? Nope – hang on in there, because the good news is that the coin–op version (by Sega again) is completely different from the home computer version. And better. Much better. In fact it's fab.

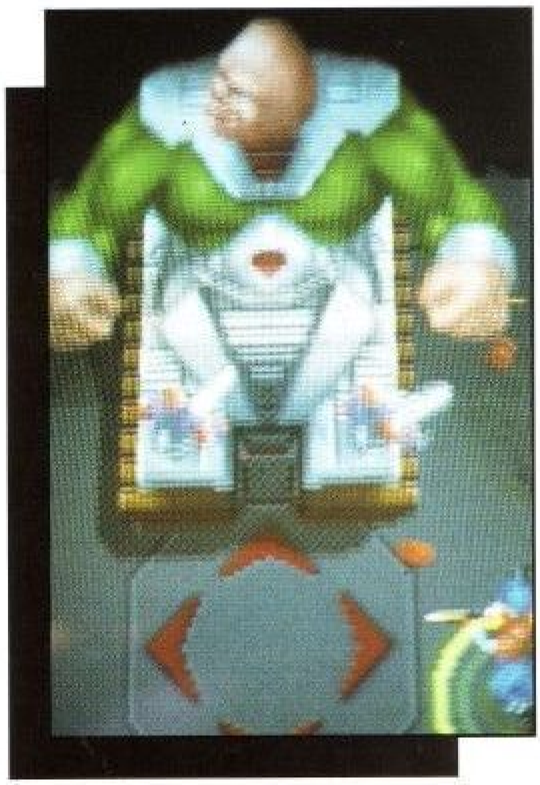


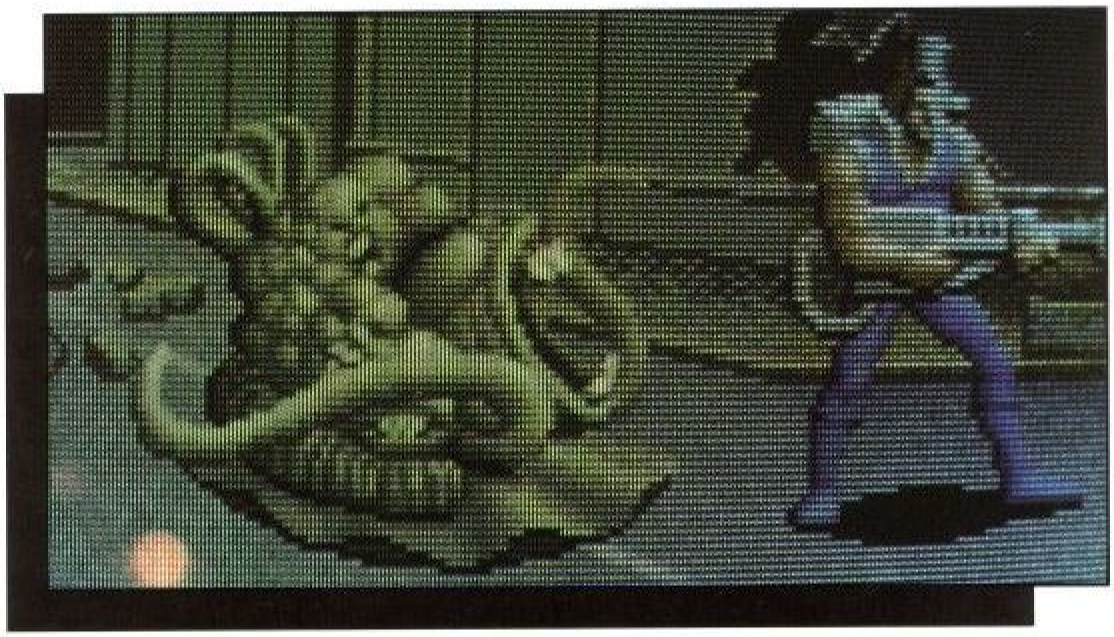
Sega has been clever in that it has gone back to the fundamentals. What is Our Mickey famous for? Music. OK – let's put a world allocation of sampled sound into the game and play it loud and often.

Let's concentrate on the graphics and make them cool and moody. Gameplay – let's keep it simple. Result? A good looking blast that keeps your feet tapping throughout the action.

Feeling a little like Escape from the Planet of the Robot Monsters – Moonwalker has the same isometric view and similar game aims – OK, so the meat of the thing is a little sparse. But enough thought has gone into one thing to make it fun.

You control a Michael Jackson sprite who must zap away at nicely drawn baddies and rescue little kiddies who are tied up. Laugh-a-minute. Press the "Smart Bomb" and what happens? The scene dims and a spotlight zooms in on you (or you plus buddies if other – up to three in total – chums are playing). The record "Bad" starts playing, you start bopping. So do all the baddies on screen, in synchrony with you! And at the end of this splendidly sampled riff – they all blow up! This one you must try for yourself!





Finally – anyone remember Williams? This is the company that, way back in the mists of the early Eighties, produced some of the best games ever; notebly Defender, which as we all agree is the best game ever produced.

They also knocked up a classic called Robotron which was played on a single screen with you controlling your on-screen sprite with two joysticks. One moved the thing, the other controlled the direction of fire. So you could move in one direction and fire in the other. This was necessary in Robotron because you were being mobbed by hordes of baddies.

Now, the best part of ten years later, Williams comes up with Smash TV – a fourth generation variant of Robotron in zillions of colours, with great animation, not a little humour and tons of Williams playability.

It's supposed to be a 21st century version of The Price is Right, with you picking up prizes on the screen while being assaulted on all sides by TV company thugs. Frantic. It may even send the more fragile minds amongst us over the edge into paranoia – as you are remorslessly pursued around the screen. But it also happens to be completely fantastic.

It's first coin-op release for ages (Williams usually concentrates on making excellent pinball machines) all I can say is – more please!!! That winds it up for this month – next time, the owners of a hot dog stand repel invaders from Outer Space. Honest......

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- Reports showing each entry in a month or for whole year
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- Spreadsheet type table showing class totals in each month
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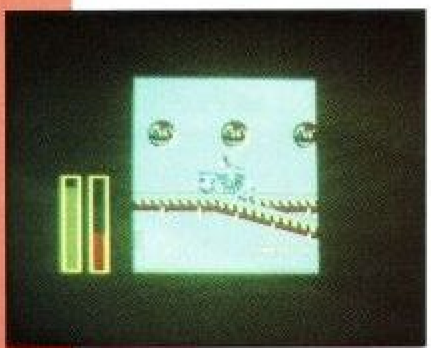
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Law abiding citizens beware as the ACU team takes to the streets with Judge Dredd, fights for aviating glory in Fighter Bomber and gets fraught with frustration with the skill factors of Klax in this month's selection of screen blasts.

GAMEPLAN



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Flip the tiles into the bins, but you'll need to be fast to survive.

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TOP 20

Pos	Last	Title	Publisher
1	(2)	Fantasy World Dizzy	Code Masters
2	(6)	Pro Boxing	Code Masters
3	(2)	Temple Of Doom	Kixx
4	(3)	Paperboy	Encore
5	(NE)	Manchester United	Chrysalis
6	(NE)	World Cup Soccer '90	Virgin
7	(NE)	Jack The Nipper 2	Kixx
8	(NE)	Football Champions	Cult
9	(4)	Rock Star	Code Masters
10	(NE)	Evening Star	Hewson
11	(7)	Yogi's Great Escape	Hitec Software
12	(8)	Thomas The Tank Engine	Alternative
13	(9)	Dragons Lair	Encore
14	(15)	Road Blasters	Kixx
15	(NE)	Quatro Sports	Code Masters
16	(NE)	British Super League	Cult
17	(NE)	World Soccer League	E&J Software
18	(5)	Wonderboy	Hit Squad
19	(10)	3D Snooker	Players
20	(16)	Chase HQ	Ocean

Last month's position in brackets
Top 20 compiled by Gallup



Fighter bomber

Go for Top Gun as you make waves on the airways

It's mad, it's bad in the real world of supersonic air combat fighting. Thrusting through the skyways at 2.5 Mach, bandits at 12.00 high, heat seeking missiles closing in fast behind you and a rebel target in your sights begging for destruction. Only the very, very tough can hack it. Take over as Tom Cruise's knees turn to jelly in terror.

Goggle up, head for the runway and take your pick from the four luscious machines at your disposal. Will you take the Russian Mig 27 Flogger, with its sloping nose for optimum low level attacks, or the British Tornado, with its ability to fly at 500 knots at tree-top height, a force to be reckoned with? Alternatively, there's the USA's F4 Phantom, its extra fuel cell giving it an incredible 2,600 mile combat radius and last, but by no means least, there's the Swedish AJ37 viggen, with it's powerful Saab engines allowing for short take-off and landing in quick scrambles.

Once past that little poser, the skyways are your own. Pick up on the free flight offering and you get the chance for some much needed practice, the opportunity to find out just what your craft can do. Starting off on the runway, at 30,000 feet, over a bridge, or hanging in the air without power, waiting for landing, it'll take some getting used to.

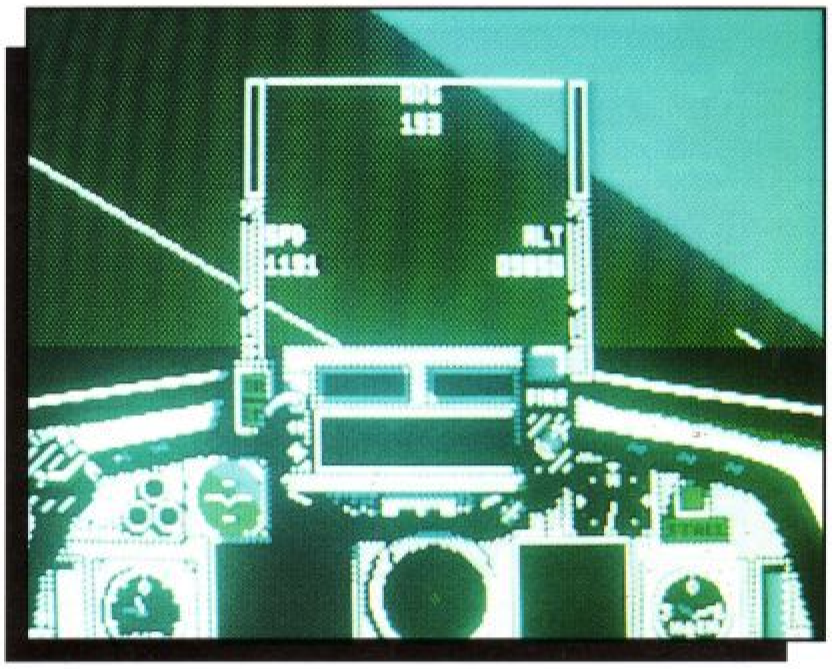
Going on to the missions, you'll need to complete the covert attack before you can progress to the later levels. As you seek out the rebel base, the graffix inside the cockpit are excellent. Various controls will give you an all round perspective of your aircraft, as well as those around you. Release chaff as missiles home in on you, and don't forget to arm your side-winders before letting them loose.

As you fight your way up the impressive scale of missions, through tactical to offensive, your aim is to be Top Gun, if you'll pardon the impression.

Every point you earn is added together as you battle against the cream of the world's air crews at the Elsworth Air Force Base in South Dakota, USA. Beat the best of the best and you could walk off with the coveted Curtis E Le May Trophy. But, and its a big but, you'll need to be good.

As a flight simulator, Bomber on the CPC is every bit as exciting as the 16 bit offerings, though without some of the obvious refinements. My advice, go out and get bombing.

Chris Knight



ROUND-UP			
NAME	Fighter Bomber		
FROM	Activision	PRICE	Disc £14.99 Cassette £9.99
80%	78%	84%	TNT
GRAFFIX	SONIX	PLAYABILITY	VERDICT

Loathing, frustration, paranoia; the belief that someone up there is really out to spoil your day. All of those who, bored with the excessive finger ache of the old shoot-em-ups, took the playing pastures of Tetris for a spot of light relief, will understand all of these emotions completely.

All of those who make the wise move of going to the shops to add Klax to their games collection will soon be joining the list.

Using an incredibly simple concept, Domark has come up with something in Klax that is going to be mindblowingly successful. All you have to do is watch as the coloured tiles roll towards you, catch them on your paddle, and then flip them down into the bins to make stacks, rows and diagonals of three tiles of the same colour.





Klax

An addiction you really won't want to kick

Making your debut on stage one, you'll be lulled into thinking you're on an easy ride here. The tiles amble towards you slowly and, after all, you only have to make three Klaxes to qualify. A piece of cake.

Once you progress to the higher levels, however, you'll start cursing the day you ever considered buying the game. Level two requires five Klaxes and already the tiles are beginning to speed up. Setting up diagonals in level three will pose real problems for the novice, while the required total of 10,000 points in level four is enough to daunt even the most seasoned Klaxer.

There are 99 levels in all, and you're certainly not going to see half of them off in a hurry. No, you're going to keep coming back to this time and time again, each time believing that the elusive tenth Klax can be done.

Quite apart from the addictive challenge, you'll need a large amount of strategy in your quest for Klaxes. In the earlier stages, you have a speed-up option to bring the tiles racing towards your paddle, and you can store up to five titles on your paddle at any one time, enabling you to plan your moves well in advance.

An extra bonus is the ability to filp tiles back up onto the table, allowing you to wait for tiles of the same colour to come together. Don't hang about though, those tiles will keep on coming and if you drop one, it is noted on the drop meter. Drop too many and the game's over.

On each of the later levels, you can chase bonus points by lining up cross Klaxes or multiples, although as a beginner, just coping with the basic requirements is enough to drive you mad.

Already a success in the arcades, this coin-up has been converted marvellously onto the CPC. If you can take the pace and lick the frustration, get out and start Klaxing now.

Chris Knight

ROUND-UP			
NAME	Klax		
FROM	Domark	PRICE	Disc £14.99 Cassette £9.99
82%	76%	90%	GOLD
GRAFFIX	SONIX	PLAYABILITY	VERDICT

The cecco collection

Four of the best for shoot-em-up fans in Hewson's latest gathering.



Get a grip shootie fans, this collection is going to knock you for six. Hewson have gathered together here four excellent titles from the ace programmer Raffaele Cecco, and if you haven't got any of them yet, sit back and enjoy.

As Exolon, your task is to lumber through over 100 screens of frantic alien action, blasting and generally dealing out death as you go.

Starting off with a small hand blaster and some handy grenades, points are awarded for doing away with obstacles, small pod and large aliens, missile shells, launchers, and you'll get a whacking 3000 points for getting into the double launchers lying around here and there.

Watch out for the pneumatic hammers and rocket gun emplacements, however, you'll be feeling very sorry for yourself if you don't.

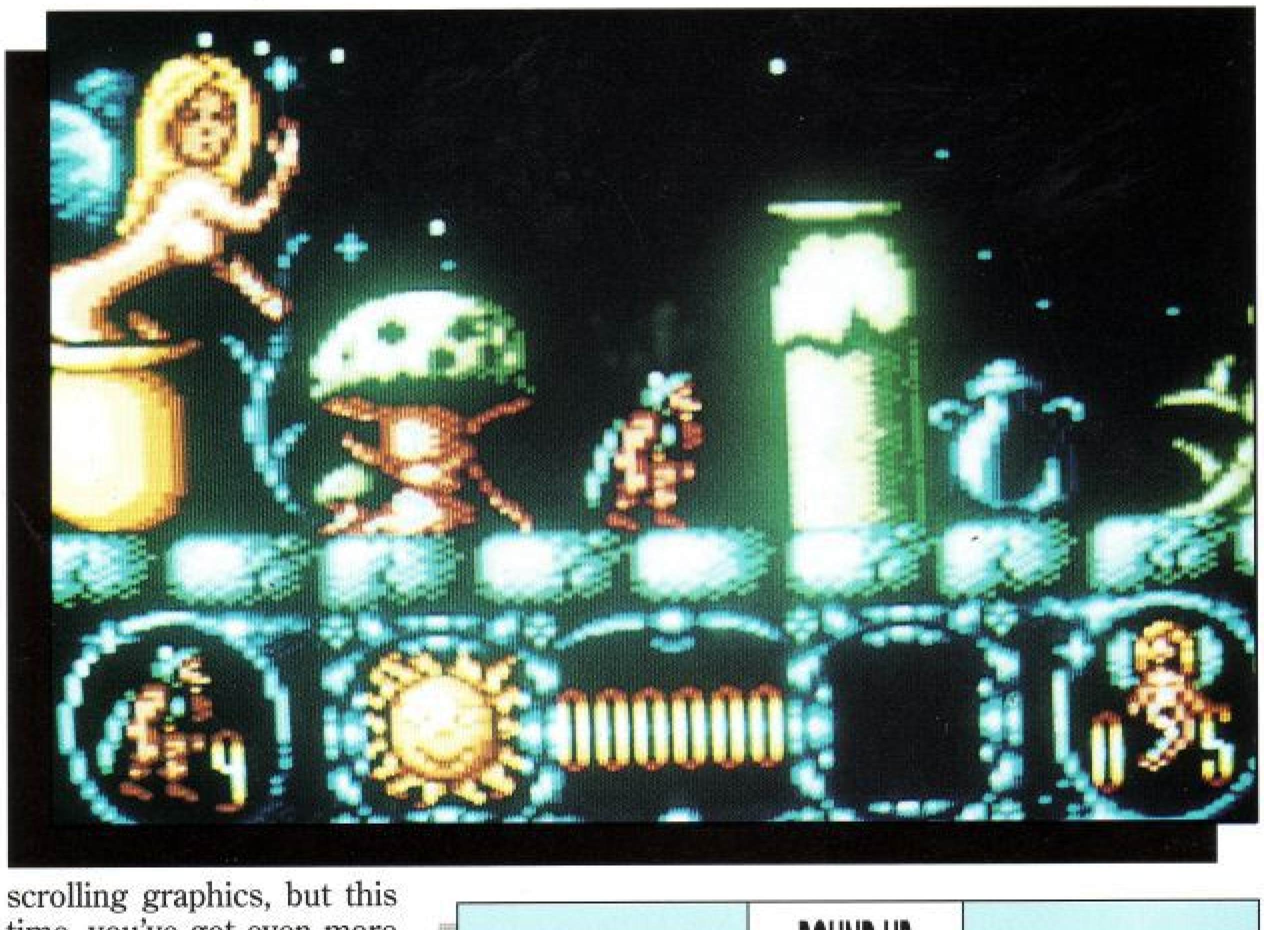
Taking it in turns to play the role of the vulnerable but athletic Vitorc, and the lumbering exoskeleton of Exolon, the action is frantic and you'll need every extra life you gain at the end of each level.

Remember Cybernoid? The pirates have made off with a large amount of Federation goodies, and it's your task to get them back in your sleek, superpowered Cybernoid ship.

Manoeuvre your way through heavy planetary defence systems to destroy the pirate ships, then get into position to pick up the falling debris.

With bombs, impact mines, defence shield, bounce bombs and seekers at your disposal, you may feel this task is a pushover. Wrong, there's a time limit that you need to beat. If you don't make it back to the depot with the goodies in time, say goodbye to your beloved ship.

The pirates are back for more in Cybernoid II – The Revenge, and this time they've brought a Battlestar with them. It's the same procedure, with excellent scrolling graphics, but this time, you've got even more firepower to remove the pirates from the screen.



Last up is another Hewson epic; Stormlord. Your tranquil realm has been invaded by the evil queen, and if you fail in your quest to free the fairies and restore peace, then the queen's dark sovereignty will last throughout eternity.

In the first part of your mission, you will need to pick up and use various objects, such as keys, to free the fairies from their painful imprisonment. Once this is done, you can progress onto the next stage.

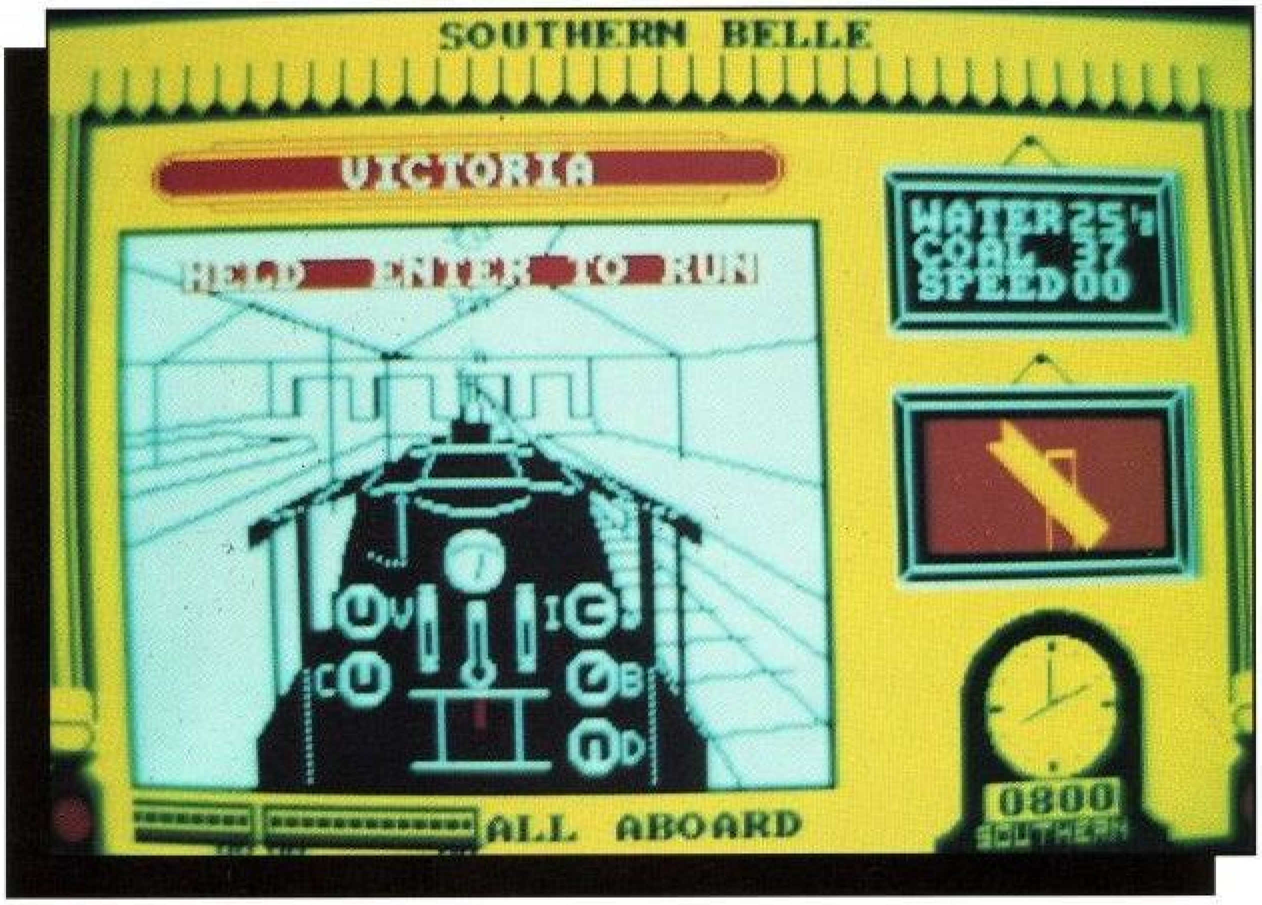
To get to the outermost regions of your realm, there are handy spring-boards to catapult you around, but beware of the queen's cronies that are out to get you. Venus fly traps, huge worms, flies, dragons and many others are equally keen to see the back of you: shoot or you're doomed.

At the end of each level, there is also a neat mini-game which will have you chasing fairies, blowing kisses at them and trying to catch their tears. How touching.

For the price, the Cecco collection should not be missed.

Chris Knight

ROUND-UP			
NAME	Cecco Collection		
FROM	Hewson	PRICE	Disc £17.99 Cassette £12.99
85%	82%	88%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Evening star

Puff your way though the undulating Dorset hills in your favourite loco

Passengers should note that the buffet car will be closing on arrival at Bournemouth Station. Passengers requiring luncheon should make their way to the buffet car now, where the final sitting is now being served.

Well, things certainly ain't what they used to be on the rail-roads. Exorbitant prices for a single ticket covering a distance you could walk if you had the energy, and you're lucky to see a crusty bap left in the buffet car at rush hour.

Bearing all of this in mind, it's nice to be reminded of a gentler time, when the old steam puffers ploughed their way majestically across England's unspoilt countryside.

Driving a diesel or electric could quite probably be handled by a trained antelope, provided it was told which buttons to push and when, but managing a steam monstrosity, now that's another matter entirely.

As train driver of the Bath to Bournemouth run, you'll need to do a fair spot of cramming before you know exactly when to cut off, stoke the fire, dampen the fire and apply the vacuum brakes to give your passengers a smooth and serene ride through the Dorset and Somerset hills.



With the central graphics display being a view out of the drivers seat, you'll be able to see stations and signals as you approach them, and you'll also be able to blow that whistle to alert workers on the track before you.

With maximum speed limits on certain stretches of the track, you'll also need to manage your braking and cut off systems to perfection to avoid wheel skid on the track.

To start with, take a look through the demonstration run, which will give you hints from an expert on how to manage the route. Then, take your pick from six different levels of difficulty.

Try the training run first to get to grips with the controls, without the hassle of stopping at stations, then go onto the stopping trains with time limits, before going for the record non-stop run to Bournemouth.

As an added extra, the last option will enable you to try any option with added problems.

On the training run, your performance will be assessed for safety, economy and timekeeping. If you completed the run without fatal mishaps, you may well be in for a glowing report from the inspector, so work hard at it if you don't want to be reprimanded for short or rough stopping in the error messages.

For train lovers, gentle simulation addicts and yearners after a forgotten time, this is a must, and to make things even better, Hewson are even throwing a copy of the original classic Southern Belle into this little package, so dig out your old Casey Jones cap and start puffing.

John Taylor

ROUND-UP			
NAME	Evening Star		
FROM	Hewson	PRICE	Disc £17.99 Cassette £12.99
76%	74%	75%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Italy 1990

Another footie offering, but could it be the best?

The World Cup has finally left us bruised and festering behind yet, as I write this, I don't even know who's going to win it. It's a curious old world.

However, before we hang up our football boots and leave the soccer scene behind for a long, long time, there is just one more offering that is an absolute must if you like getting into the fine detail of things, and that's US Gold's offering.

All wrapped up in an exceptionally fine package, including an incredibly detailed fact file and trivia quiz, is a fast moving, all action game that puts it head and shoulders above much of the opposition.

With a choice of one or two players, you can play friendlies against the computer or your pals, or you can opt for the real action in the realistic World Cup simulation.

Pick your favourite team for starters, decide which formation you're going to play, go all out for attack or play it cagey, and then peruse the full squad of real name players to get the best eleven for the job.

What makes this game so good is this attention to detail, would you put Bull up front, or stick with Beardsley? That's for you to decide Mr Manager.

When the picking is done, the friendly newscaster appears to tell you where, and when your next match is. In the case of England, well, you have to pick them out of sheer loyalty don't you, it's Ireland in the Sant Elia Stadium in Cagliari on June 11. The newscaster will also tell you who the favourites are, but don't pay too much attention to that, nobody else does.

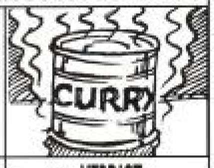
So, finally we come to the games. With all this hype and preparation, you might expect a little disappointment. Not here, though. From the first whistle, the action is fast and furious, perhaps a little too fast in places, but the graffix are clear and as you view the pitch at a slight angle from above, there is some marvellous scrolling to keep the action flowing nicely.

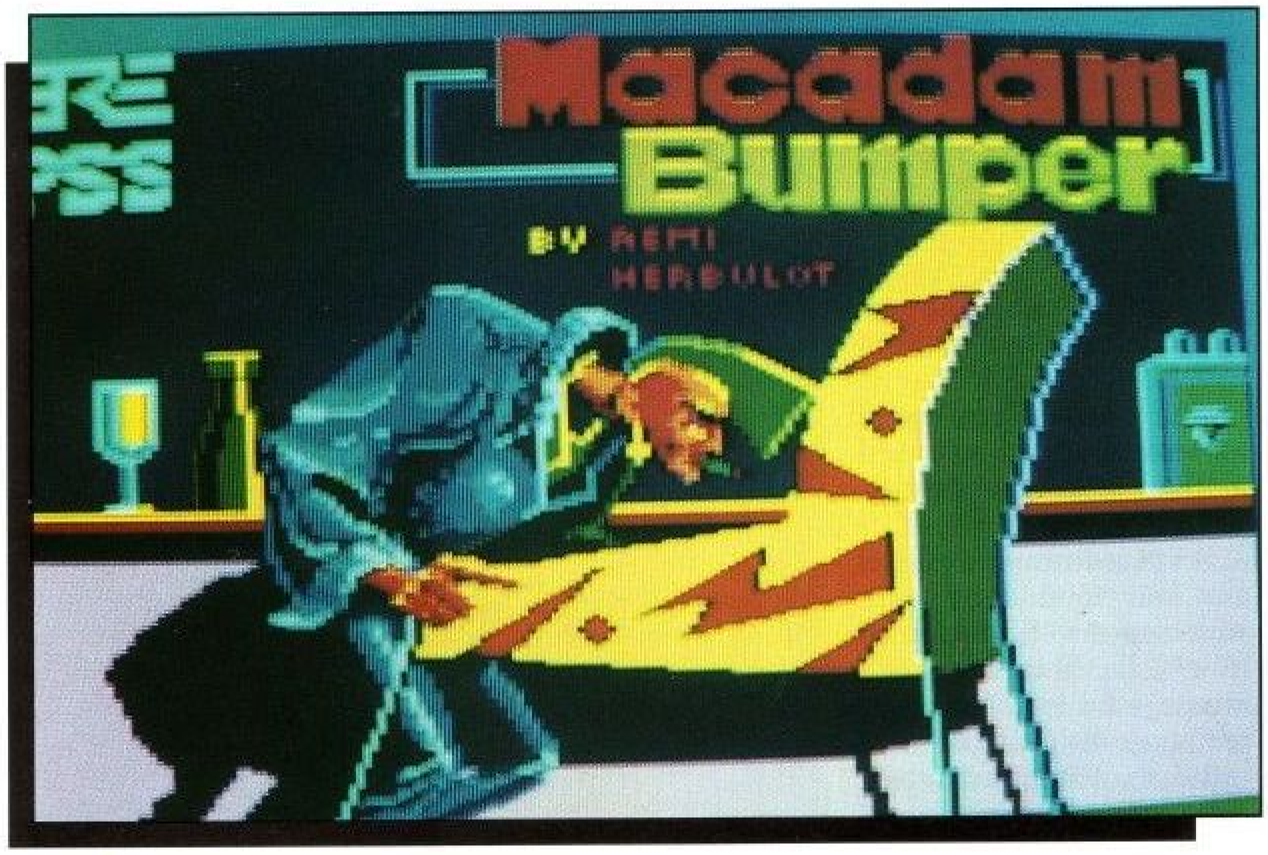
Expect some fierce challenges from the opposition as you reach the later stages, as well as some excellent ball skills. On the open pitch, you can certainly knock the ball around between your players but, some of the best touches come in the form of goal and foul indicators. Every time a throw-in or corner is given, a special graffix routine appears to let you know just what is happening, and the goal celebrations are equally cheerful.

With some neat sound effects thrown in, including the ever-present noises that crowds tend to make at football matches, this is a footie game not to be missed, the only drawback being that, seeing as the World Cup is over now, that ain't much point in entering the competition enclosed to see the final in Rome. Unless, of course, they want to hold it over for the next World Cup in America for latecomers.

Dave Peach



ROUND-UP			
NAME	Italy 1990		
FROM	US Gold	PRICE	Disc £19.95 Cassette £12.95
82%	78%	85%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT



The Complete Games Centre

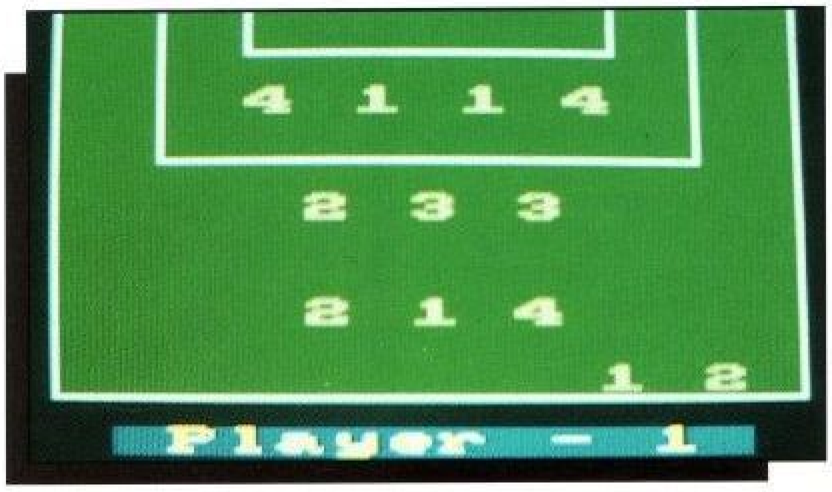
You lucky gamesters have never had it so good.

If you're looking for something to keep you occupied on a rainy day, then you need look no further than this box of delights. As CDS put it in their modest claim: "We proudly present the compilation that caters for all tastes", and they are not far wrong.

All wrapped up in this tasty little package, there are ten games in all for the CPC, along with playing boards, counters, money (no, it's not real unfortunately) and playing cards.

What is going to cause real problems here, is arguing over which one you want to play. To kick off, there's Brian Clough's Football Fortunes, which will have you wheeling and dealing in the manager's boardroom, buying and selling players, and making sure that your team ends up on top. For two to five players, the game is played both on screen and on the board provided. Excellent fun for footie lovers.

Next up is Castle Blackstar. As a text-style adventure on its own, it's so-so, but as part of the collection it is well worth its place as you delve around for treasure and clues. The forest can cause problems without a map, so be careful, and be sure to return the Orb of Power to



Artemis. Brain power will see you through the Hi-Q-Quiz, a quickfire question and answer game, with varied topics like sport, entertainment and history; a not so trivial pursuit!

As Nick Razor in Ice Temple, you are involved in a race against time and the aliens to thwart a deadly mission against the Earth. Your space cruiser has been stolen, and when you trace it, you find the aliens in their Ice Temple, removing the planet's energy to fuel their mission. As the planet dissolves into slush, you must remove the eight pieces of the reactor and throw them into the refuse-crusher chutes in this powerful shoot-em-up.

Moving on to the simulator section, you have an incredible choice of pool, pinball and Steve Davis Snooker. Get all of the smoky poolhall atmosphere in your quest to sink the eight ball, then take time out for some light relief in the arcades before trying out the more gentlemanly art of snooker, under the expert tuition of Mr Davis.

If that were not enough, there are three more epic adventure and action blasts to round off this excellent collection. Syntax will have you collecting crystals in your supersonic impulse drive fighter in your bid to crush the evil rebels of planet Syntax. In Wizard's Lair, you must plot your route through seven complex layers of subterranean caves and passages, piecing together four lumps of the Golden Lion and making good your escape from the depths.

Last, but by no means least, choose from the five intrepid missions available in Wulfpack. Sink U-Boats as you attempt to land valuable supplies on the beachheads, or help out at the D-Day invasion. Whichever you choose, there is more than enough action to keep you busy.

In fact, you're going to need a month of rainy days at least if you want to do this collection justice, and at the price of only £12.99, I want to know why you're still reading this and not already down at the games shop with a copy in your hand!

John Taylor

	ROUND-UP		
NAME	The Complete Games Centre		
FROM	CDS	PRICE	Cassette £12.99
82%	80%	95%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT

Can you feel it out there in the air?Sitting astride your mighty bike,The Lawmaker, can't you just feel that subtle shaking feeling?No, it's not the meaty throb of the motorcycle engine, it's the knees of all those bad guys out there knocking together in the knowledge that the Judge is here to wipe them off the streets.

Prepare to have your legs knocked out from underneath you as well with the excitement of six action packed levels taken from storylines in the Judge Dredd books and comics.

As you materialise on screen, you'll find yourself standing next to a Justice Central computer terminal.From here, you can get all the information you need about your weapons, the Lawgiver and Lawmaker.You can also read mail and, as an excellent extra, you can even play a quick spot of space invaders;just one of the leisure pursuits laid on for off-

Judge Dredd

Bad guys beware-the Judge is here!

duty judges.

Duty calls, however, and it's your turn to go out onto the streets of Megacity 1 to beat crime.To the side of the main display, a meter reading will keep you in touch with the level of crime;keep it down or you'll lose your crimefighting badge.

To arrest "perps", get out the Lawgiver and show them who's boss and, once collared, they'll shoot off the screen allowing you to get back to the serious business.Shoot innocent "civs" and you can also get the crime rate to rise dramatically.

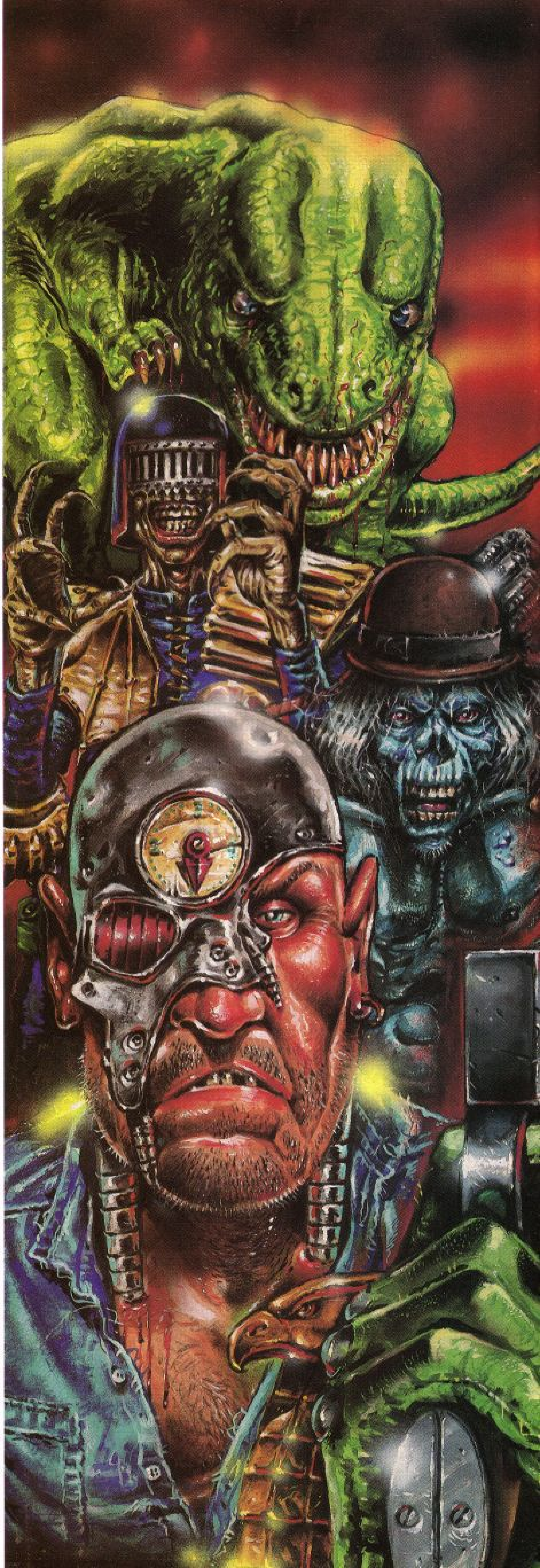
Getting back to the action, your first task as the Judge is to rid the city of the evil League of Fatties-heavy duty stuff.Wandering around the ramps and slopes of the city, the Judge is viewed side-on with 8-direction scrolling, allowing plenty of freedom in movement, which you'll need as the Fatties launch their attack.

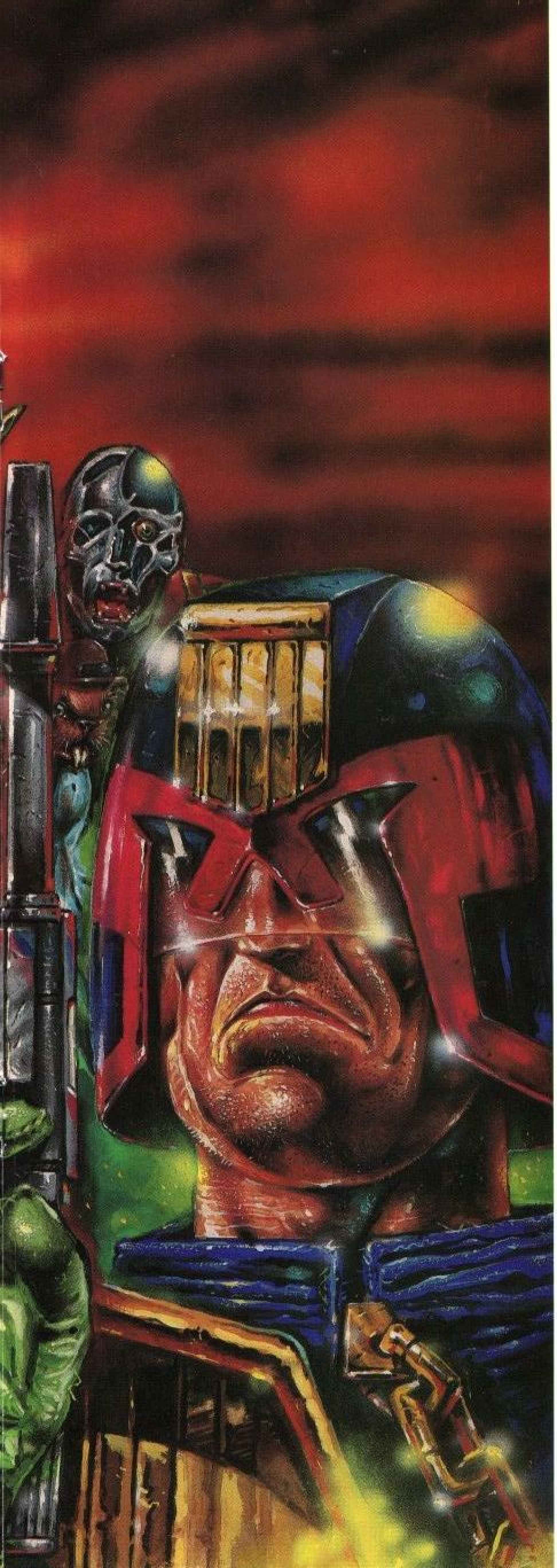
Scattered around the level are four food dispensers which need to be destroyed to stop the Fatties on their rampage for food.As you attempt to dish out law and order, the Fatties will attack in no uncertain terms;a running Fatty could see you pushed over the edge of the building;a jumping fatty will do just that in an attempt to flatten your enthusiasm, and the throwing Fatties must be really desperate, as they resort to chucking their own food at you.

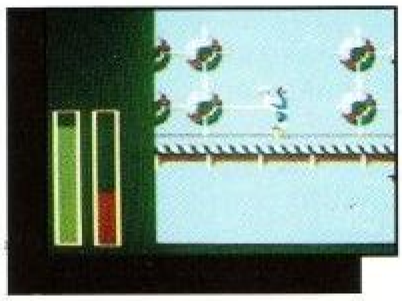
Just to help you out a little, the Civs in MC1 are as fed up with the Fatties as you are, so a little push and shove could see the crime level dropping without your assistance.

The end of each level will see you taking part in a special sequence connected with the previous events.For example, at the end of level one, you'll need to walk across the top of a large food convoy under attack from Fatties.Reach the front of the convoy before it reaches the Fatty hideout and you're through to the next round.If not, on yer 'bike.

Don't forget to use the







Lawmaker if you want to get around the screen a little quicker.With your built in radio, your trusty steed is never too far away.

Dodgy dealings in the laboratory of Professor Fribb set out the storyline for level two.A deadly enzyme to reverse the process of evolution has leaked out into the ventilation system of Charles Darwin block.Judge Dredd, your duty is to get in there and close the ventilation outlets and fight your way past the regressive human forms to the lab.On your way, you'll meet rubble-throwing monkeys, neck-biting lizards and, as you take on the end of level action in Fribb's laboratory, a host of amoeba's that multiply on being shot.Arrest Fribb to complete this tough test of character.

Sov Agent Orlok is public enemy number one in levels three and four.What's his game?Blockmania, that's what.What's that?Well, it's when dwellers in rival blocks take a sudden dislike for each other and civil war breaks out.

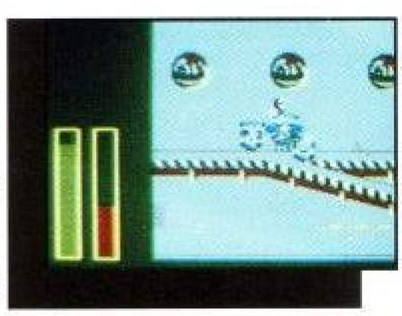
First of all, Orlok attempts to contaminate the water supplies with Blockmania solution at the Aqua Station.Destroy all of the water inlets to the main supplies, then chase Orlok off on the Lawmaker but, beware the Satallats which hover around, waiting to shoot at you and drain your strength.

After foiling Orlok's first attempt at sabotage, it's on to the Weather station where he's trying again.Keep a sharp eye out for maintenance robots on your quest to blow up the weather control devices.Once you've managed this, give chase on a hover bike as Orlok tries to escape in his shuttle.

Despite your mammoth efforts though, Blockmania has broken out in MegaCity1, and you'll need to take out the gun emplacements and restore order before going on to your toughest challenge.

Death, Fear, Mortis and Fire have somehow slipped into your dimension.What do you have to do?Boot them back where they came from using Dimension bombs.Don't get too close, or you'll feel your energy flooding out of you, just get the bombs then face each of these monstrosities one by one.Drop your bomb and clear the area for best results.

Judge Dredd looks set to be a blockbuster of the highest order, with first class graffix to date and wonderfully smooth scrolling.Each end of level sequence will have a different perspective, adding even more to the excitement and, if you're an avid Dredd fan, you'll know all of the evil characters that you have to deal with.



Starting off with standard bullets, armour piercing and heat seeking missiles as well as lasers, you will also be able to pick up more goodies left behind by the perps, giving you more than enough firepower to get out and earn your wage packet.

John Taylor

Judge Dredd
Virgin Mastertonic
Disc £14.99
Cassette £9.99

Budget Basement

Feast your eyes on another selection of budget goodies.



FRUIT MACHINE 2

If you liked Fruit Machine, then you'll love Fruit Machine 2. In fact, Code Masters has called this 'the definitive fruit machine simulator', so there you go. I've never been a fruitie lover myself, but there are plenty of features here to keep your interest. Nudges, shuffles, coin-boxes, and mega-treks will keep you on the trail for the big money, until you hit the take/stop feature to get the best win.

The sound effects are quite pleasing and the graffix are superb, but despite the prospects of hidden fortunes, turbo-skill and double and treble fruiters, there is still the problem that, unlike real fruit machines, you won't hear the tinkling of coins on the payouts.



SUPER TRUX

Get those big wheels rolling for some rough, tough action through the streets of nine cities, in a daring attempt to win the coveted "Supertrux Trophy". Starting off in London, get the green lights and race against time and the opposition to the end of each stage. Watch out for those bends and take extra care around the traffic cones; each crash costs valuable seconds.

As you progress through the European cities, there are different routes to take, but beware, some lead to certain disaster. The graffix are a bit raw, but so is the excitement as your opponents attempt to ram you off the road. Give them a blast on your airhorn to let them know that you're coming through and then brave the elements to win that all important title. Supertrux is well worth the challenge.



RAD RAMP RACER

Groooovy! Rad Ramp Racer certainly is not for the faint hearted as you mount your trusty skateboard or BMX racer and challenge the computer or a friend against the clock on some of the nastiest courses around.

Collect bonus points by passing over the flashing figures, but be careful, as these often lead into danger. There is a practice mode which allows you much needed help with your kicks and turns, but when you're done, it will be your turn to humiliate a friend with your skills.

If you get board, sorry, bored, you can even redesign the courses. Rad Ramp Racer is fun, although it is tricky to get the hang of the movements to start with. The graffix aren't bad, and if you like boarding and BMXing, this is for you. If not, it may lose its appeal relatively sharply.



BOUNTY HUNTER

Time to get out and round up the bad guys in this smart offering from Code Masters. Out there in the wild west streets, deserts, and canyons are some of the meanest mothers around. We're talking about the likes of Jack Nikolat, Charles Bronkan, Clint Westwood, and even the mighty Kodak.

As bounty hunter extraordinaire, your quest is to go get 'em for a price. Each of your opponents are clearly displayed at the start of the twelve stages, along with the price on his head. Watch out for the Indian knives and stray bullets, and be sure to pick up the extra gun, ammo and money lying around.

Get to the train, pull the emergency stop and you've got a chance.

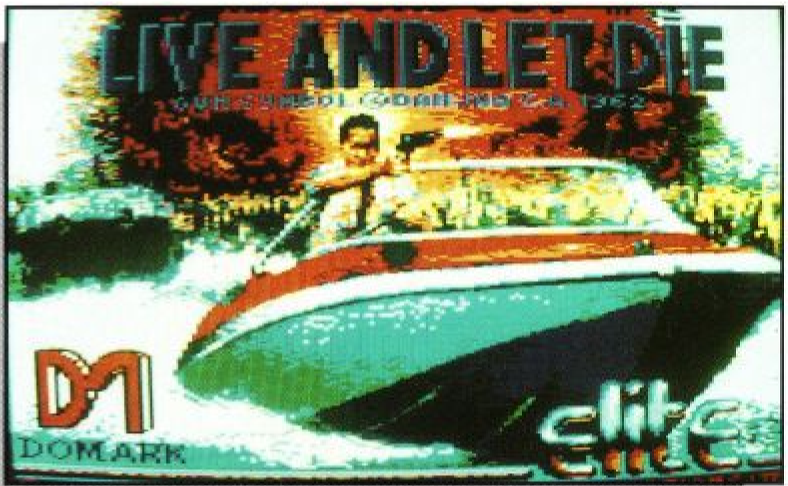
Bounty Hunter is extremely playable, with plenty of action to hold interest, especially in the shoot-outs. Go get 'em pard.

LIVE AND LET DIE

Watch out, Dr. Kananga's about. Are you brave enough to face the waterways of the world to blow up the evil doctor's drug factory? Well, in this excellent budget offering of Domark's original game, it's well worth getting blasted out of the water trying.

On the target practice range, you need to destroy red targets with your forward mounted machine guns, but this is nothing compared to the real missions, which will see you dodging mines, missiles from overhead helicopters, submarines, going through tunnels, leaping and firing back with your own snuff missiles.

On your way, you'll need to replenish your fuel and supplies using handy drop-offs from CIA helicopters, but if you want to get through to the factory itself, you'll need to be fast.



Live and Let Die is an excellent budget offering with neat sound effects. It is also visually excellent, and as you jump over that final log and see the factory go up in a puff of smoke, you'll have every right to feel proud.

Chris Knight

ROUND-UP

NAME	SUPPLIER	PRICE	RATING
Fruit Machine 2	Code Masters	£2.99	64%
Super Trux	Encore	£2.99	74%
Rad Ramp Racer	Mastertronic +	£2.99	68%
Live and Let Die	Encore	£2.99	84%
Bounty Hunter	Code Masters	£2.99	82%

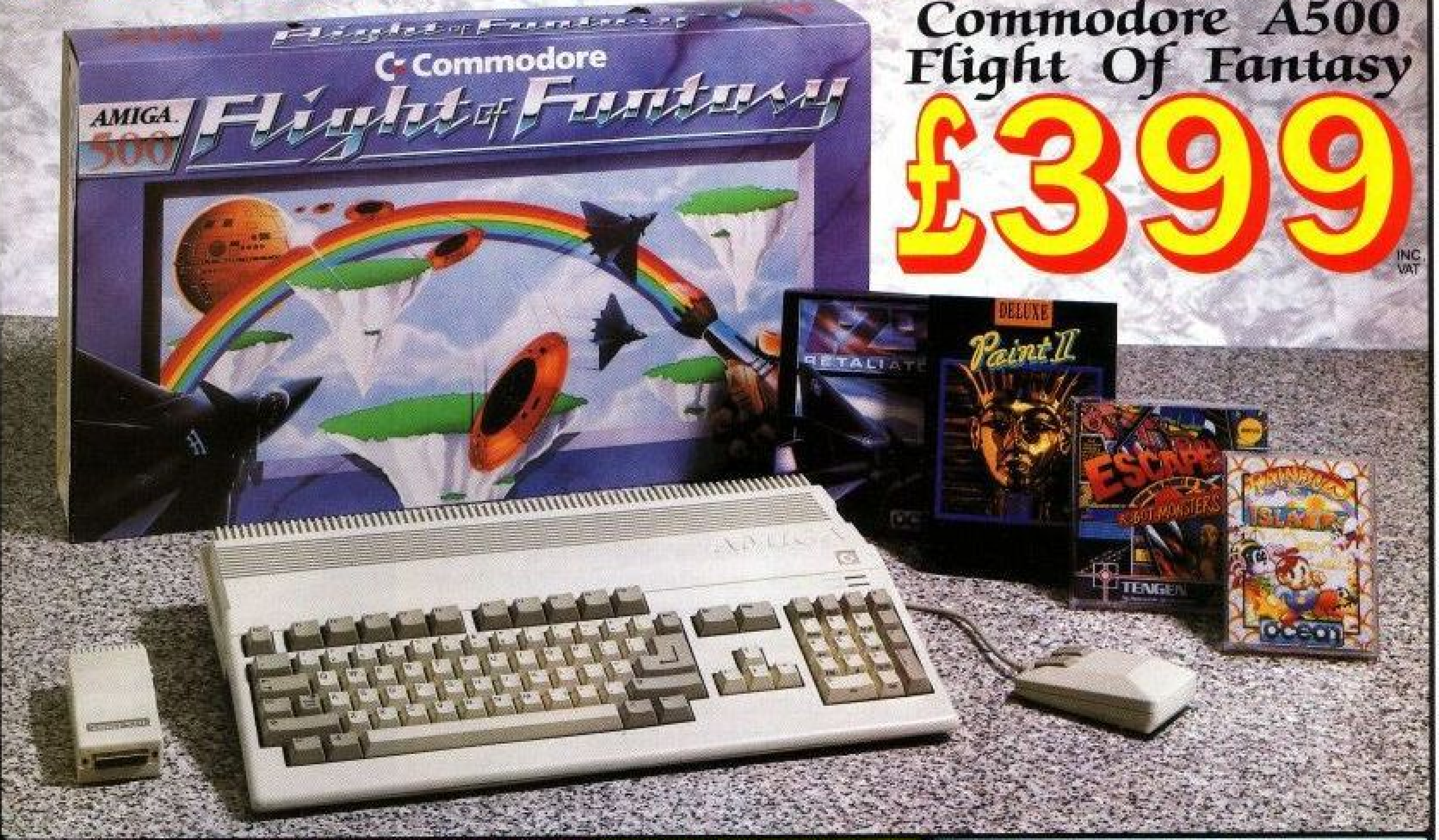
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NEW! - AMIGA PACK

Commodore A500 Flight Of Fantasy

£399

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A500 BATMAN PACK



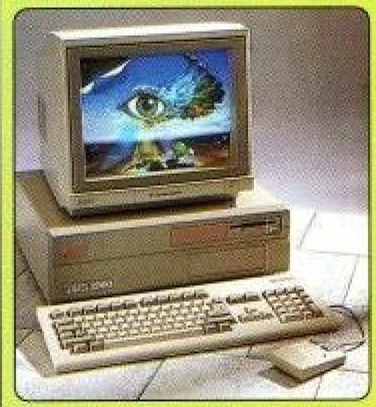
The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the **Commodore Amiga 500 computer** with **mouse controller** and **TV modulator**, plus four top software titles. The software includes: **'Batman The Movie'** - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; **New Zealand Story** - high quality conversion of the leading arcade game; **Interceptor** - Dogfight with two F-16's in this leading flight simulator; **Deluxe Paint II** - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

PACK INCLUDES:

A500 Computer & Mouse	£399.99
A520 TV Modulator	£24.99
Batman The Movie	£24.95
New Zealand Story	£24.95
Interceptor	£24.95
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BASIC Education. By: David Dorn.

In the final part of this extended examination of educational sotware, teacher-turned-journalist David Dorn, with the help of some friends, puts ARC software through its paces.

Mention BASIC to some people and they will wince, and tell you that it really isn't suitable for 'serious' programming projects. Others, however, are not quite so snobbish, and realise that, given good design and a lot of thought, BASIC can be used to give more than passable results in non speed-critical applications.

This is the ethos that ARC Education seems to have applied to its range of software. Yes, it is, for the most part, written in BASIC, and yes, for the most part, it shows. That aside, how does the range shape up?

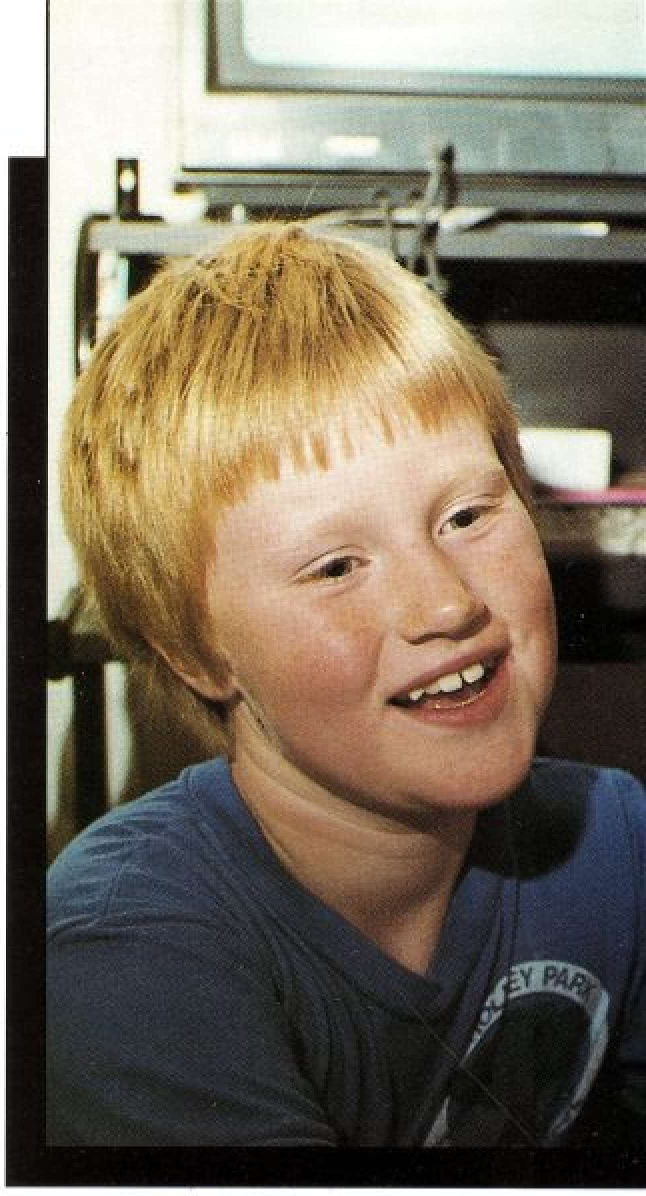
I've got to say that it comes out well. I've been fortunate enough to have been sent a seemingly never-ending supply of educational programs on one disc, representing almost the full range of ARC products. Within the one disc is a range of software that is appropriate for children aged pre-school to top primary, broken into lots of of small, easily digested bits.

I gave the software to my two 'testers', Andrew and Suzanne, having had a very quick run-through myself to see what was there, with the instructions that I wanted to know what their favourite section was, and how easy they found the programs to use. To say that their reactions were easy to guage would be understating the case. I couldn't prise them from the machine!

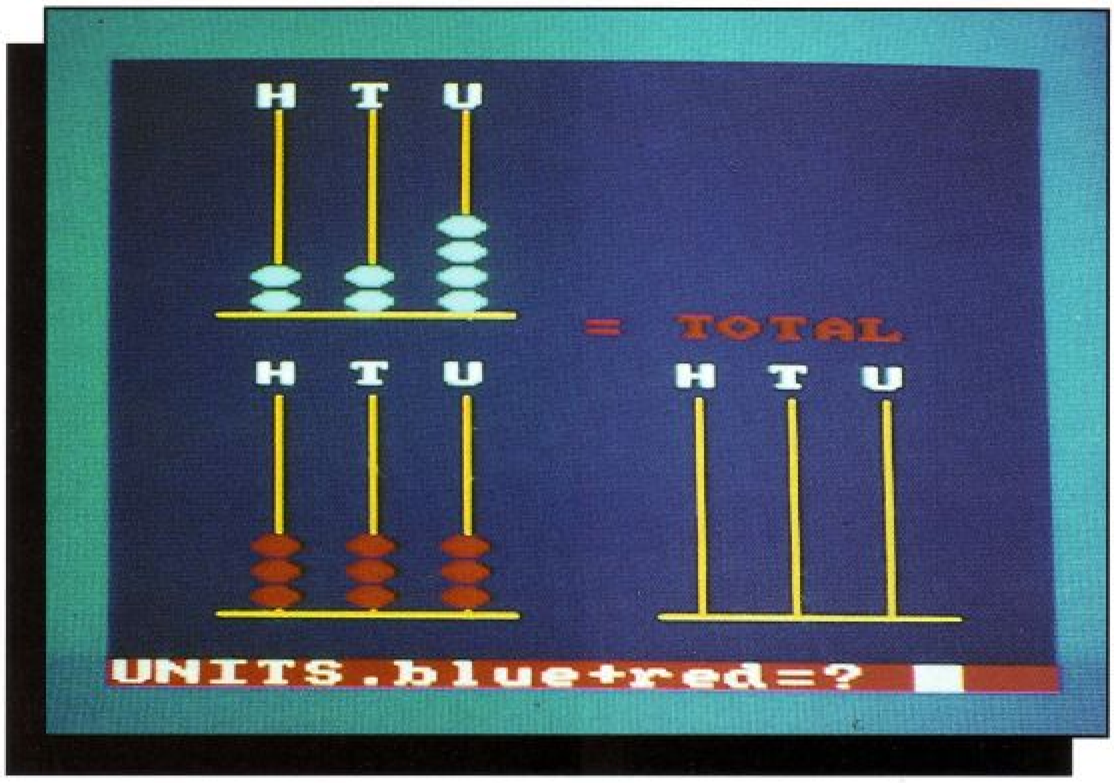
Andrew more or less insisted that I boot another machine (there are a few CPCs around the Dorn household) and let him get on with it separately from Suzanne, as his interests were very much different from hers. The problem was, you see, that they had so much choice. I haven't counted up precisely, but I estimated at least 70 different items were on the disc we received for review, so, as you can imagine, the two kids had plenty to go at, and there's no way that I can go into detail on any one of the programs.

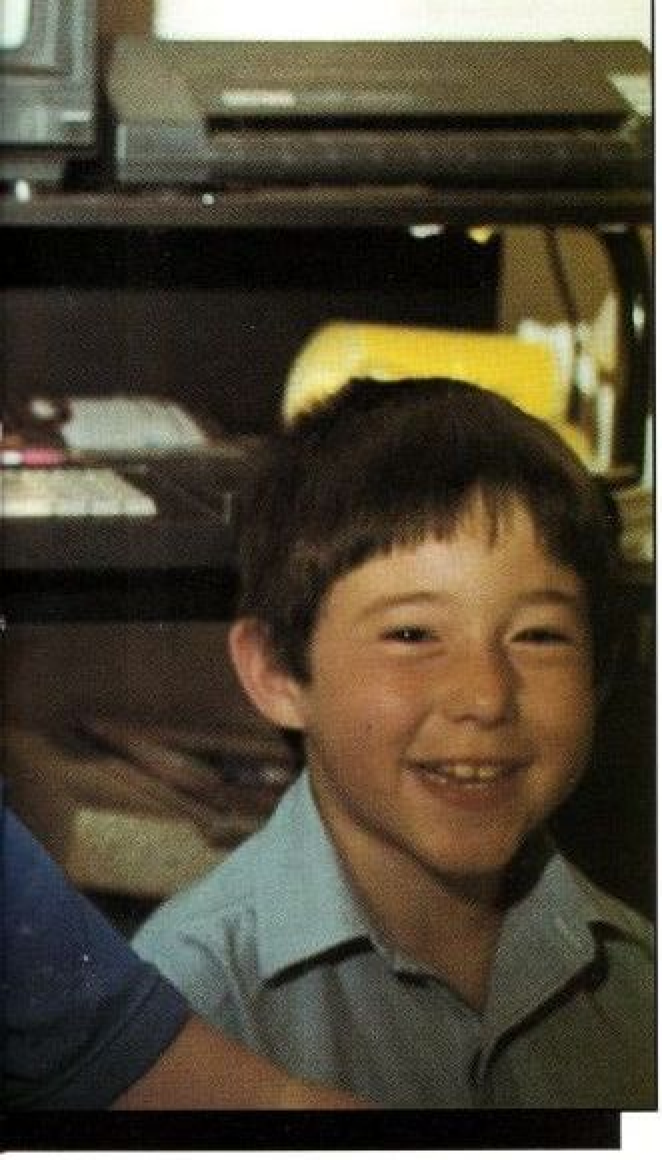
What I can do is give you some idea of how they're presented, teamed up with the screenshots you'll see here.

As you'll notice, the screens are tidy and well designed - a factor that runs through the whole of the range. All kinds of concepts are presented, running through from the very basic 'count



Ace reviewers Suzanne and Andrew take a well-





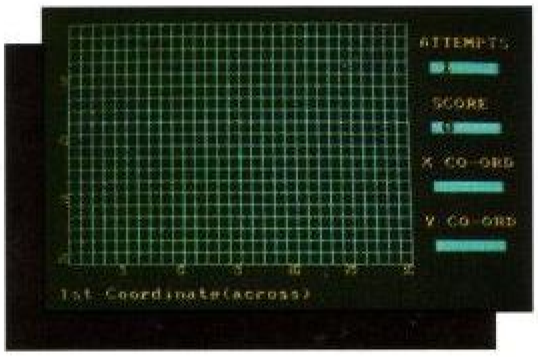
...rned rest.

them' through to direction, mapping, co-ordinates, various different approaches to reading support and practically everything else you can think of.

In short, there's every possibility that your child will be well catered for by something in the ARC range. Now, to this BASIC thing. Many of the programs in the range are customisable - the beauty of BASIC. ARC provide a comprehensive list of possible program alterations which is relatively easy to follow and implement.

Relatively easy, that is, for me and anyone who has little fear about delving into BASIC to alter things. However, I'd have been happier if the alterations to the programs had been made part of a 'configure' option from within the programs themselves. I'm sure that that would be much easier for many people, and just that bit slicker in the presentation stakes.

Even so, I'm prepared to award high marks to ARC and its range of software. Almost everything I've mentioned as being desirable in educational software



is addressed in the programs, and certainly, if nothing else, they're cheap. Check out the advertisement in this issue.

A Fond Farewell

So, that's the end of this short series on matters Educational. I hope it has been of some use to you and your children, and that you continue to use your CPC for educational purposes. Oh, alright, it isn't actually the end - I've left the contentious bits till last.

You may remember that right at the beginning I queried the use of the word 'Educational' as applied to software? I also premised that such things as word-processors, databases and spreadsheets could also be said to be educational (with a small 'e'). To put not too fine a point on it, I've been asked 'how', so I'll tell you.

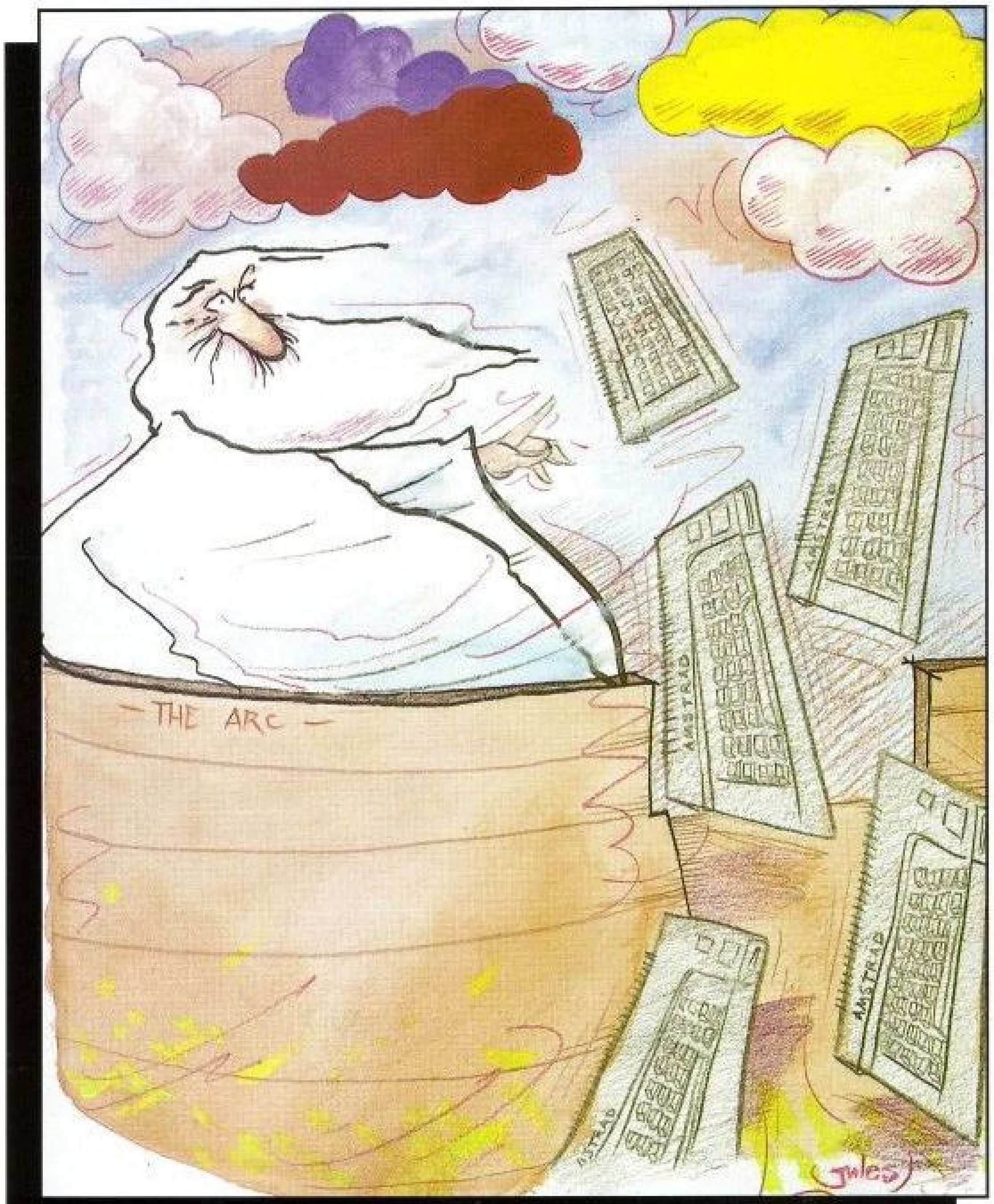
Firstly, the definition of 'educational' needs to be iterated. It means 'Pertaining to Education, assisting in the learning or teaching process' (abstracted for Webster's and the OED, amongst others). Perhaps it is also necessary to define some of the definition, particularly the 'assisting in the......' section.

I tend to view the application of word processors and databases to the learning process as being more 'thought processing' than the teaching of skills, even though skills acquisition is part of the process they support.

For instance, let's assume a child is involved in the study of a habitat as part of his/her environmental studies. Within that habitat will be many different species of flora and fauna. Using a database program, each of the species could be recorded according to family, genus and so forth, coloration, location within the habitat, and so on.

At some later point, given that the database program itself is sufficiently powerful (as most are) the information that has been recorded can be recalled in a number of different ways. Which families are represented in a given habitat? How many species in that habitat are related by genus or family? What is the distribution of a given family within a certain habitat?

This can be extended to include a



number of different habitats, until a picture of the distribution of different species by habitat can be built up. Links with graphing utilitiies could be utilised to present the information pictorially, and drawing programs (Art Studio and the like) used to produce drawings of the species under examination.

Video digitisers could be brought into use at this point to help with illustrations, and the resulting conglomeration brought together to produce hard copy output suitable for both files and wall display. Not only that, but the research done and committed to electronic form is easily made available to oher children for their research at a later date. As time passes, a large electronic data retrieval system can be built up, with discs of information on all kinds of things.

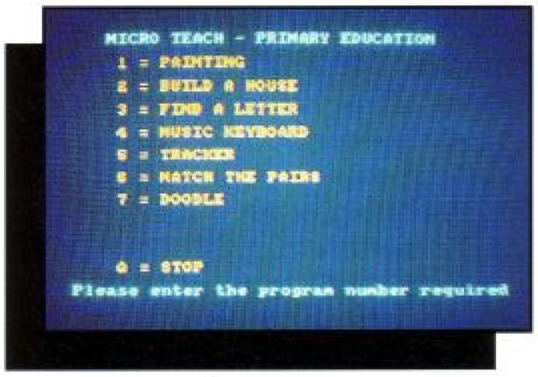
In this way, not only do children learn, but they also contribute to other children's learning, and schools benefit by building up localised information banks that bought-in text books could never hope to provide.

That scenario developed from the use of a simple database program. What of the Spreadsheet? Here again, children deal with numbers on a daily basis. How many times as a child did you sit outside the school gates doing a traffic census? If you're like me, it would be at least an annual event for you, particularly in the primary school years. I you remember back to then, you'll recall that, at most, we used to draw a few graphs, and construct a pictogram or two. Rarely, if ever, did we use data collected by the whole class, or, better yet, the whole school.

And yet, the possibilities here are enormous. Given that different sampling sites are available, a spreadsheet could be constructed to handle numbers of vehicles of different classes at the various sites, and the figures examined for links between them.

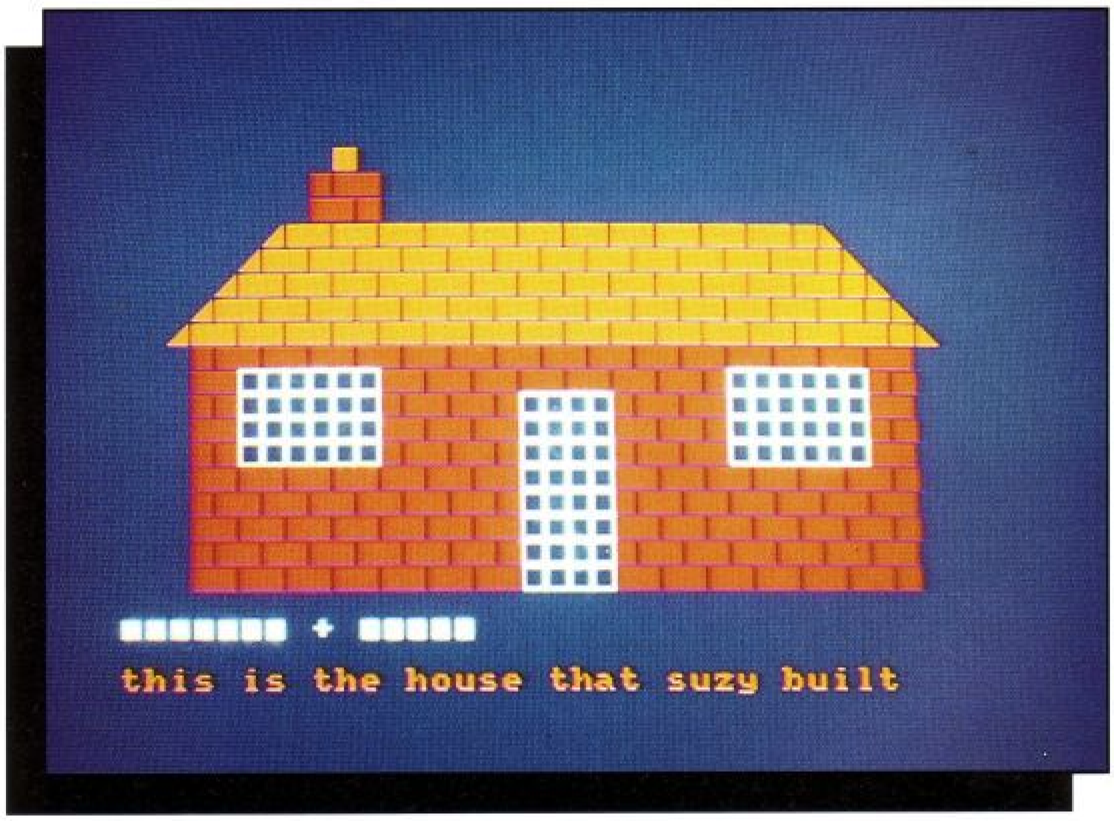
For instance, if the number of cars per hour going North down road 'b' inreases, is there a corresponding increase in the opposite direction? An increase in the flow going West along road 'a' (which intersects with road 'b')? If so, what is the link, and can it be expressed mathematically? Is it a one-to-one relationship? Once the mathematical relationships are worked out, what-if? calculations can be performed automatically, and the resulting data used to construct hypotheses about road traffic densities close to the school.

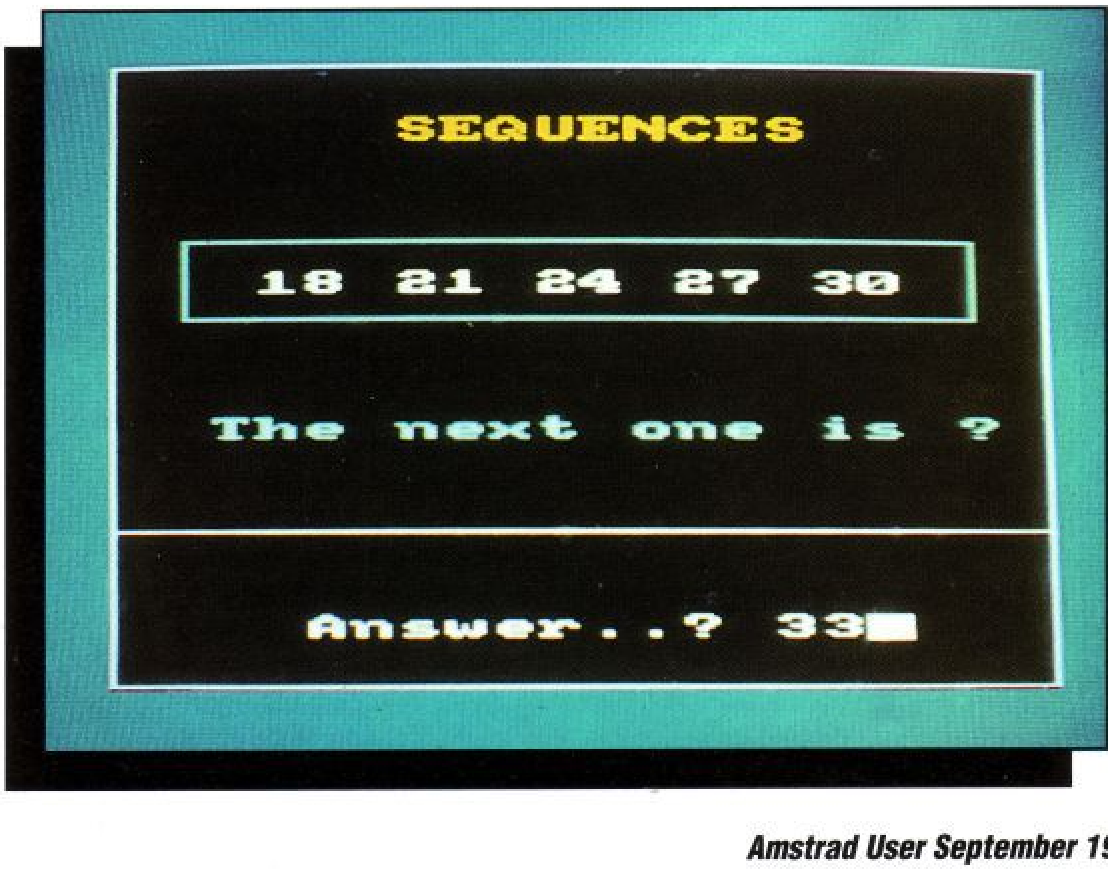
Yet again, the drawing programs come into play to construct maps of the sampling sites, produce illustrations of the various vehicles involved and so forth. Direct links into graphing programs (or the graphing facilities of the spreadsheet programs) can be used to produce, as before, hard copy suitable for display or reference. The data can be referred to at a later date, after another survey, for comparison purposes - or even extended for the same reasons.



A little thought along this sort of line pays vast dividends in the long run. You see, 'Educational', as applied to software, is a mis-used word. OK, the purpose designed stuff is fine, but there's so much more out there that can be used for educational purposes, that anyone who limits themselves to the narrow definition of 'Educational Software' may well be doing themselves, and their charges, a disservice.

That definitely wraps it up!



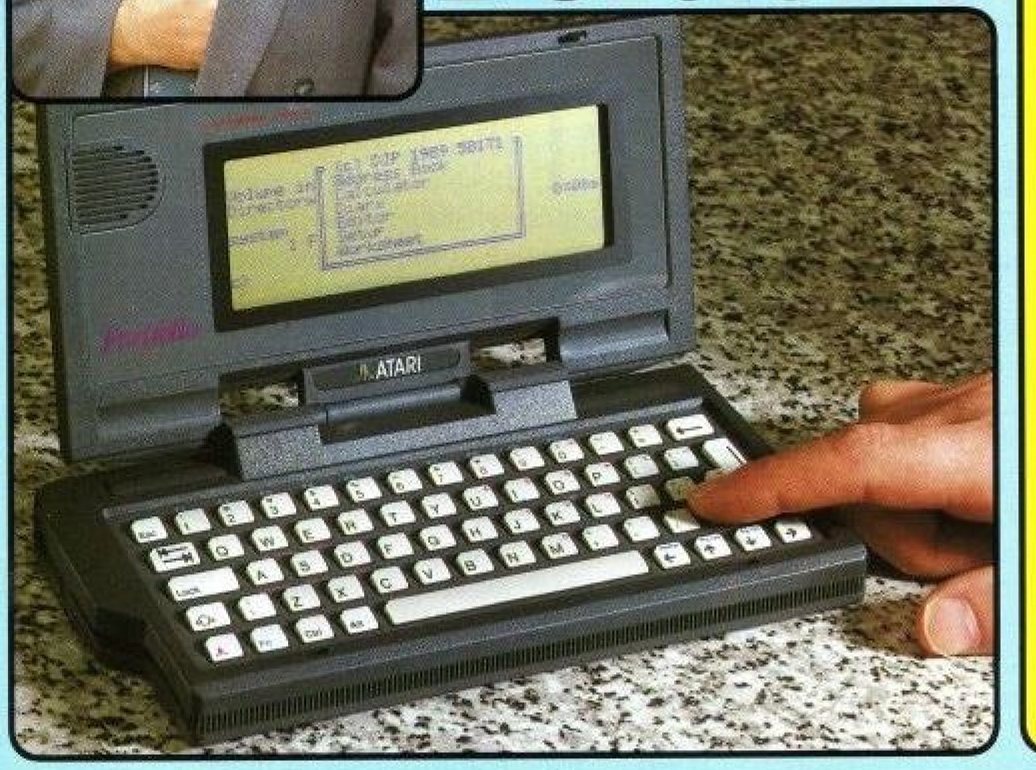


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Build your own library as Auntie John delves further into the wonders of operating systems.

Librari



I have a nasty dilemma when I sit down at my keyboard to type all these words. The more I write, the more space it takes up on the page. The more column inches taken up, the less space there is left for those wonderfully likelike pictures of you-know-who. It's a toughie.

Part of me enjoys nothing more than helping you with your monthly doses of coding, but the other part would rather see lots of pictures. It's to help my mother, who sneaks into the newsagents and leaves all the copies of ACU open at this page. Ah, I bet you were wondering who did that. I've tried to stop her, but she's constantly popping into the High Street stores and leaving entire rows of magazine racks displaying nothing more than your old friend, Aj. It's a hard life.

But back to the real world, and last month we finished our little chat by introducing an operating system address that will become a life-long friend, &BB5A. Now to me at least, nasty big hexadecimal numbers like that can be a bit impersonal. Let's use the technique of "labels" we spent so much time on to improve on the situation.

Our machine code program therefore changes from:

```
org &8000
ld a,"A"
call &BB5A
ret
```

to

```
Start_of_code    equ &8000
Ascii_code_A     equ 65
Print_a_char     equ &BB5A

org Start_of_code
ld a,Ascii_code_A
call Print_a_char
ret
```

This may seem a trifly wordy, but will make much more sense when you come back to it in a week or so.

Another enquiry I received (you see, people do write to me you know) expressed concern over the apparent length of machine code programs. For example, compare the example above

ian girl

with the BASIC equivalent.

PRINT "A"

Hmmm. There could be a good point here. The BASIC version certainly seems a lot simpler and quicker. Why is this? What's going on?

The first thing to remember is that your CPC simply cannot understand any program unless it is in Z80 machine code. No matter what language you may think you are writing in, the CPC is using machine code.

BASIC programs must be converted into code for the computer to make any sense of them. This conversion process means that BASIC is an interrupted language.

Normally this process is completely invisible, and happens as soon as you type RUN and press return. At each line of your BASIC program, the CPC takes a deep breath and in a flash does the conversion. It then obeys the machine code which results. (Note strictly those who think they know what is going on: As you might have guessed, the conversion process itself is a program written in machine code. Remember – the CPC knows nothing but Z80, and I mean nothing).

Here is (roughly) what happens when the computer runs the program which consists of our mega-simple PRINT "A" statement.

Step 1
"OK, here I am. Where was I? Can't remember. Better start again. OK, here we go. Clear any variables that may have been left over from last time."

Step 2
"Now, let's take a look at this program. Ah yes, PRINT. I know what that does. And I know the address of the operating system address that does it too. Easy."

Step 3
"Now what am I to PRINT? OK, it's a string of characters. And the length of the string is 1. Fair enough."

Step 4
"Ahoy there Operating System! Please do a PRINT with this string I have here, whose length is one. Thank you."

Step 5
"Hmm. That's the end of the program. Quite a short one. Time for a snooze."

Of course, each step here takes time. Plus the code that the BASIC program is translated into is a good bit more complicated and lengthy than the short program we wrote.

In short, our version will run faster and take less room. We win!

The only drawback is that programming in code is a bit more tricky then programming in BASIC, but I'm sure you will have realised that by now.

We can now deal with the problem of length. You may be thinking that your fingers will have long worn out before you have written any sort of program. The example that wrote a letter "A" to the screen was seven times longer than the BASIC version! Well, let's examine a specific case – our own PRINT routine – and see if we can improve matters somewhat.

Here's the program specifications, or "specs" as we hackers call them.. (An important part of programming is using the right words at the right time. Understanding them is much less vital). We want a routine that prints a string of characters to the screen. The string can be of any length greater than zero characters long, and will end with a 0. Not a "0" character, but an Ascii code 0. If this seems a bit confusing to you, check in the back of your user manual.

The character "0" has a code (48) just like the character "1" or "&". However, the character whose code is 0 is something totally different. In this case we will be using it simply as a way of terminating the string.

OK, so we have the specs. Now for the program.

```
start_of_code  equ &8000
Print_a_Char   equ &BB5A

org Start_of–code

Print_a_string:
;Input: HL contains the address of the string,
;which ends with 0
;Output: A string, plus registers corrupt
loop: la a,(hl)
;Get character to be printed
cp 0
;Is it zero?
ret z
 ;Yes it is – stop
call Print_a_Char
 ;No it isn't so print it
inc hl
 ;Point to next character
jr loop
 ; Continue
```

Nothing too taxing here. All the hard work is done by the operating system, all we have to do is give it the character to print. However, the program has one or two important concepts in there somewhere.

What we have written is not really a fully fledged program. Instead, we have written a reusable function. If you assembled and ran the program as it stands, it would probably crash. Why? Because we haven't fulfilled the input conditions, that's why.

Where is the string? What is HL pointing to? Not a lot. If nothing else, it demonstrates how to put comments in the program to remind yourself what the varoius functions do.

To use the function in our program, we should define some strings, and then call the function, thus:

```
  org Start_of_code
  ld hl, String 1
  call Print_a_string
  ld hl, String 2
  call Print_a_string
  ret
String1:
  db "Hello",0
String2:
  db "World",0
Print_a_string:
  etc, etc.
```

Do you see what is happening? We are using our string printing function twice from within the one program. Now is that value for money or what?

The function is one that we may wish to keep as part of a library of useful routines. Now, whenever you need to print a message in a game you can load up the routine and use it. No need to reinvent the wheel every time we write a new program.

Next month we'll continue our venture into the world of real programming with some more useful routines to incorporate into your own personal libary.

See you then!

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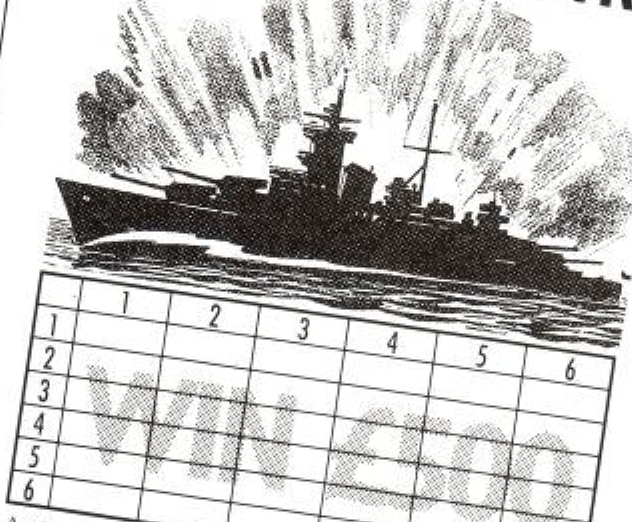
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Vax hands out some more helpful hints for you to use when you get back from your holidays

Summertime

I am feeling extremely cruel this month. What am I doing? I'm giving you a whole heap of goodie pokes, tips, and cheats. The catch is – you won't be able to use them 'cos you'll be off on holiday!

But now it's time for a few tips. Not the kind filled with rubbish, but some good stuff, like this lot from Robert Brent of Bracknell. His first one is another of those keypokes. You know the things; a five-key left-handed crossover on alternate Tuesdays. Well, not that bad, but if you hold down D,E,2,0,9 in Batman the Movie, you skip a level (a rubbish skip?). As to what to do when you discover yourself in deep dung on the tricky higher levels with your fingers tied in knots, that's up to you.

Naz K. And Paul M. also sent this in (these pokettes are supposed to be ORIGINAL guys!), and their version was better illustrated, but they sent it to Ziggy for some reason. Don't let on to Ziggy that I happened to get this letter of his though. It accidentally fell out of his mailbag when I passed and jumped out of the envelope....

Grasshopper

Anyway, back to Robert. Renegade III has a level-skipping keypoke too: Hold down Q,U,I,T to do the business. The Renegade keypoke is a bit more useful though, and gives you infinite lives as well.

Operation Thunderbolt allows you to redefine the keys to control two players at the same time! Just put player 1 on the joystick, and redefine the keys for player 2 using the same joystick. Voila, dual firepower.

Robert's pretty good at Dragon Ninja too. Ah, grasshopper, I shall tell you the secret of success. On levels 1,2,4,5 and 7, kick the bad guy, walk past him while he's thinking about it, turn and kick him again. Repeat until the energy bar runs out, and the bad guy folds.

On level 3, stay in the water (no need to worry about sharks, crocs, oil slicks, raw sewage outlets etc.) The ninjas, oh so conveniently, can't see you when you're in the water, but you can still hit them. Unfair, but it works.

With level 6 the dogs (on the lower platforms) are hard to see. To avoid any bitching about ruff times, the best bet is to stay up on the higher platforms as the dogs can't get there and you feel a howl lot safer. To dispatch the baddie (why don't the dogs bite HIM?), stick to the left-hand side of the screen, and leap to the kill with one of your best flying kicks.

Level 8 – the final level – has a baddie chucking stars at you (called

shuriken, for those who don't read Teenage Mutant Ninja Turtles magazines). To kill this one, low-kick him, walk round him, and low kick again until he fall down (as per levels 1,2,4,5 and 7).

Doggy distress

In moments of Dire distress try to remember to: Kick or punch the swordsmen and women before they get too close, avoid the doggies by jumping them or staying high up, and try to remember where the shuriken-throwing ninja appear, and duck the shuriken.

Well Robert, I think you deserve the odd goodie for that, and boy have we got some odd goodies...

A feller called Jonathan Seymour of Cambridge has noticed a Keypoke for Bostghusters, er, Ghostbusters II. This apparently only works on level 1 (the rope scene), but if you pause the game with a "P" (and why else do people pause games?), type in "AYKROYD", and unable again, you get an unbreakable rope with infinite energy tied on. If it doesn't work, try CAPS LOCK on. There must be more like this, so if you find one, send it in to me at the Hacker's Haunt.

Multiface magic

Due to popular demand (hi, Mum!), I'm going to print another swatch of multiface pokes (in alphabetical order this time). This lot comes from Carl Wilson in Kenilworth, and there are ones there we've printed before but I don't care. There won't be any new multiface owners who don't know what to do with them 'cos you can't buy the things anymore.

That should keep the multiface brigade quiet for at least a month. Thanks

Blues

Carl, I'll get something off to you as soon as I've found someone to lick the stamp.

John "Hackman" Girvin has sent in a few more pokettes, and two of them are ee-blooming-normous, so I'll have to print them next month. Until then, have this one for After the War. That's not when you're supposed to play it, silly. Oh, I don't know, have the pokeykins anyway:

```
1 'AFTER THE WAR <disq> hacks
2 'Both parts
3 'By John Girvin
4 'March 1990
5 '
10 MODE 1: CALL &BC02
20 addr=&BE80: RESTORE
30 READ byte$
40 IF byte$="AFTERMATH" THEN 80
50 POKE addr,VAL ("&"+byte$)
60 addr=addr+1
70 GOTO 30
80 CLS
90 PRINT "Insert game disq and press a key..."
100 CALL &BB18:CALL &BE80
110 '*** LEAVE ALL LINES IN ***
120 DATA 21,a6,be,cd,d4,bc,79,22
130 DATA a7,be,32,a9,be,21,00,01
140 DTA 11,00,00,0e,41,df,a7,be
150 DATA 21,b0,be,22,04,02,3e,c3
160 DATA 32,03,02,c3,00,01,84,00
170 DATA 00,00,a4,48,4c,46,03,90
180 DATA af,01,7e,fa,ed,79,3a,5d
190 DAT6A 80,fe,47,28,0b,3e,18,32
200 DATA 49,80,af,32,44,80,18,09
210 DATA af,32,5c,9c,3e,c9,32,11
220 DATA 83,c3,b9,aa,AFTERMATH
```

As you see, it's for the disc/k/q version. That's about all I know as the distructions were separated from the poke in the mail. Don't worry though John, I've still got your address and I'll have a word with the ed about goodie dispensation.

Right, having finished this month's column, I'm off on my own holiday. I might even come back from it for next month's column, if you're unlucky.

Game	Address,data	What it does
Booty	54f4,0	Infinite Lives
	5a38,0	Music off
Cabel	0bla,0	Mystery poke. Can't read Carl's handwriting.
Cauldron	9cb3,0	Infinite Hags
Cereberus	6c88,0	Infinite lives
Combat School	1785,0	Super jump on level 1
Continental Circus	117e,0	Computer cars stay in lane
Dizzy 3	a063,0	Infinite lives
	0093,0	Music off
Dynamite Dux	8aae,0	Infinite energy
	8B9A,0	Infinite credits
Fruit Machine	733F,0	Infinite credits
Cryzor	1526,0	Next level on death
Glider Rider	112b,0	Infinite time
	12df,0	Infinite bombs
	1309,0	Infinite energy
	44eb,0	Disable lasers
Masters of the Universe	65a9,0	Infinite lives
	8804,0	Infinite energy
	8a9d,0	Stop clock
Mutant Fortress	0798,0	Infinite lives
Popeye	116,0	Infinite energy
Postman Pat	1923,0	Infinite lives
pro Ski Simular	98a7,0	Computer won't win
Sabre Wulf	ab34,0	No insets
Skweek	8313,0	No aliens
Star Wars	44c1,0	Infinite energy
Strider	17c8,0	Immunity
Tempest	4edc,0	Infinite lives
The Hit Squad	46b6,0	Infinite energy
Thunderbirds	6e48,0	Infinite time
Turbo Chopper Sim	7dd,0	Infinite lives
Trantor	0c34,0	Infinite fire
	0c7c,0	Infinite energy
Rick Dangerous	88c3,0	Infinite lives
	9f35,0	Infinite lives
	9f90,0	Infinite greandes
Road Runne	r023f,0	Infinite lives
Rolling Thunder	4720,0	Infinite lives
R-Type	927d,0	Skip level on death
WEC Le Mans	0c5f,0	When you hit a car, you just go into low gear

Board games

Dr. Dorn flips through the Maxwell House pages to help you help yourselves.



To make a change this month, I thought you might be interested to see the kind of Applications Advice that goes on the ACU bulletin board system. Here, people leave their queries, and get their answers back by the next time they log on, usually. The following queries are all more or less as they came in, and are answered, in the main, by other users. I've stepped in only on the odd occasion.

Read and enjoy – then consider what you're missing!

From Craig Willcocks
Subject: Qualitas
I am seriously considering buying a printer enhancement package and have set my sights on the Qualitas program, I would however like some background information on this system along with the KDS 8 bit printer port. Do you know anything of this set up? I would be grateful for any reply.

From: David Dorn
Reply-To: Craig Willcocks, "Qualitas"
Subject: Re: Qualitas
In my experience, the two together can give some extremely nice output. To some extent, the Qualitas package is easier to use with some WPs than others, but once it's installed and running, there's little problem.

The KDS 8 bit port is a compact piece of kit you can fit and forget – I've never come across anyone who had any complaint about it. As I said – a good choice. Tell me, what WP and printer do you use? (just (R)eply here – then other people can read any answers and follow conversations!)

Cheers.....Dave

From: G.G. Dennis
Subject: connections
I am using an Amstrad 6128 with PACE COMMSTAR interface and LINNET modem. With honeyterm selected and set to RX1200/TX1200 and the LINNET in auto configure mode I find it impossible to connect to FOCAL POINT at V23. There are no problems with connecting at V21 with honeyterm set at RX300/TX300. Is anyone else having similar problem or am I missing something obvious. I am using the automatic dialling Atdn code and this works OK but although I can hear a carrier being received the modem does not seem to respond and gives the NO CARRIER message after timeout.

Inspection of linnet register s51 shows it has changed to RX1200/TX75 as I would expect. I must resolve this otherwise u/1 and d/1 will take too long and my phone bill will be astronomically large.

From: David Dorn
Reply-To: G.G. Dennis, "connection"
Subject: Re: connections
At the mo, the board is running on a Miracom Courier HST, which doesn't have a 12/75 speed, unfortunately. We're working on rectifying this ASAP, maybe with a second line. Meanwhile, don't worry too much about uploading at 300bph, when the 12/75 thing gets sorted, I'll post a bulletin for login!
Dave de sysop

Reply-To: Martin Lycett

Reply-To: Craig Willcocks, "Qualitas"
Subject: Qualitas info
I am afraid I don't know much about the KDS printer port, except that when you buy CP/M on ROM from Graduate they give you the software to run the thing, BUT, (waffle waffle), I DO have and heavily use Qualitas and find it the best thing since sliced mouse. I use an Epson MX80 printer which supports quad density graphics but not an NLQ font. I have to say that the printouts I get on my little Epson are (in my view) much better than a lot of the expensive printers we use at work.

When you get qualitas, you get about 5 different fonts, plus a font editor (for creating your own) and the main qualitas driver program. The version I bought was the older version without any CP/M support, but current versions allow you to run under CP/M too. If you have a 6128 then the main qualitas program sits away in banked RAM, and there are special "fixes" to run it with word processors that use that extra memory (eg Tasword 6128). What I have written is a little basic program which can take a text file in BASIC and print it straight from disc (this is because my word processor is Protext CP/M plus version.)

Once qualitas is resident in memory, it behaves just like a printer. It obeys most standard Epson escape codes, like underline and the like, and to the host program, it is invisible. They say there is no trouble using the 8-bit printer ports with it, but, as I said before, I don't know from experience. Certainly an 8-bit port allows you to print taller characters.

Hope this has been some help.

From: Vince Merrell
Subject: Re: Your modem
Hi.
Couldn't help noticing your point about the SM2400 and Commstar not being too compatible.

It's just an idea but wouldn't this work?.....

Dial the number on a phone, as soon as it's connected, say "ATO" to the modem which forces it on-line as soon as you hit the enter key. I don't guarantee it'll work cos I've norra lorra CPC comms experience but assuming you can get Commstar into terminal mode before it actually detects connection so that you can issue an ATO, it should work.

Vince

Continued on next page ▶

◀ *Continued from last page*

From: Graham Garner
Subject: Disc Drives

I require help from all those brainy people out there. I have a CPC 664 and have just got a second disc drive (3.5 inch) and would like to know how to configure my CPC to read 80 track discs. I have read the firmware guide and have found out how to patch the XPB to read different formats, but nothing about changing from 40 to 80 track!!!!

any ideas ......Graham Garer

From: John Priestley
Reply-To: Graham Garner, "Disc Drives"
Subject: 90 trk Drives

Graham, are you using Rodos, Romdos or Ramdos to run the second drive. Rodos and Romdos are on rom and Ramdos is on disc.

Rodos is by Romantic Robot and Rom/Ramdos is by ermm forgotten the name but you can buy these for about £30.00. There are plenty of adverts in ACU for them John.........

From Malcolm Arnold
Reply-To: David Dorn, "Re: Qualitas"
Subject: Re: Qualitas

I had a problem with the printer port, Dave... The first one I got gave me random italics in the middle of normal text when the port was supposed to be transparent (ie when I wasn't using Qualitas). I was sent a replacement, but had a few probs with that too in the transparency dept! I had to keep removing it to use my wordprocessor when I didn't want Qualitas output. By that time I was using a PC, so didn't actually get around to sending it back – but from the response I got when I returned it first time I don't think I had been the first to query it... Has to be said that KDS were helpful and did the swaps immediately.

Also have to agree that the Qualitas output is superb. I ran an advert in a mainstream magazine for which I set the text with it, and it looked fine when reproduced!

MAL.

From: John Priestley
Subject: Teletext Decoder

Replying to Mark Hopwoods letter in the June issue, there is a Teletext Tuner for the Amstrad but it is a bit pricey. It was in the region of £70 for the tuner which is needed to receive the TV signals and then the decoder which is sold separately about the same price. Sorry but I can't remember the name.

J. Priestley, Bradford, W Yorks.

From: Tony Charles
2400 (V22 bis)"
Subject: 2400/2400 (V22 bis)

Not sure if you have had any replies, but would recommend you waiting for one of the "box-pushing" shows to come up and maybe you'll be lucky and get an AMSTRAD SM2400 modem. I got mine knocked down from the retail price of £250 to £187. Its really good value for money even at its full price 'cos it can do practically anything 'cept make tea.

If you do get it and get any problems I'll be glad to help you with the small amount of knowledge I have gained.

Regards TC.

From: Bob Elmes
Subject: RS232

Can anyone suggest some decent RS232 serial interfaces & software for them.

At the moment I am using the Pace RS232 with Commstar Rom, but my modem, a SM2400, doesn't seem to like it too much.

Please help if you can.

From: John Priestley
Reply-To: Bob Elmes, "RS232"
Subject: re: RS232

Have you ever considered the KDS RS232. I don't know what the address or phone number is but you will be able to find it in a computer magazine unless someone on here knows.

John

From: Alastair Stark
Forwarded From: Main Menu
Subject: HELP!!!!

SOMEBODY HELP PLEASE!. I am new to comms, and I own an Amstrad CPC with commstar software. I have managed to log on to this board alright using ATD (tel. no.) through Honeyterm. I cannot figure out how to log on to PRESTEL through HONEYVIEW, because it seems impossible to issue direct commands to the modem, and as usual, the instructions are very vague, and assume 'A' level in communications! If anyone can help me please leave me a message, and perhaps forward this message to another more suitable area. Also, I have not got the faintest idea of how to download software. I can see some good programs there, but when I tried to download, I did not have any protocols (whatever they are), and the download was aborted.

I would be very interested in buying a copy of a FIRMWARE GUIDE TO THE CPC 6128, or any other book which details all the firmware calls for use in machine code, if anyone has a spare copy, because no shops seem to stock it anymore.

Alastair Star (14)

From: Bob Elmes
Reply-To: Alastair Stark, "HELP!!!"
Subject: COMMSTAR

I too have got exactly the same problem, I too can't find a way of dialling when using Viewdata (PRESTEL). That is why I have asked people if they know of another type of communication software, as I feel they MIGHT be incompatible. I have been given the Address & phone number of KDS, and I may consider buying their software. Trouble is I think you have to buy the RS232 Sieral port as well!! If I do decided to buy it I will tell you how I got on. (NO promises though!)

As for the protocols (is that how you spell it. Well it looks good!), because you are using HONEYTERM you will have to choose ASCII or XMODEM. I ALWAYS use "XMODEM" as it checks the data you receive. Once you have chosen the file to download, the protocol, a message will come up telling you how long it will take etc. At this point you can abort the download, see the download message on how to do this, or if you want to continue you hold down "CONTROL" & press "F3", you then have to choose either ASCII or XMODEM, you chose XMODEM and you are away. The program is sent to you saved to the disc that is in the drive. When the download has completed a message saying "Press any key" appears, press a key and then press "ESCAPE" and you are returned to the Bulletin Board. If I was you I would try downloading a short program first as then if it doesn't work you HAVEN'T wasted too much money.

I also see you are after a FIRMWARE manual, aren't we all. Well those clever(?) people at Amsoft decided quite a while ago to stop printing it so you will be VERY lucky to find one. If you do though send it to me please!!!

BOB ELMES (14)

P.S. Good luck and enjoy COMMS!

Well, that's the jist of it folks. Don't forget, if you want to be in there, the number is 071 828 1577. See you there, live long and prosper.

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SORCEROR'S CASTLE

BY JOHNATHAN PUGH

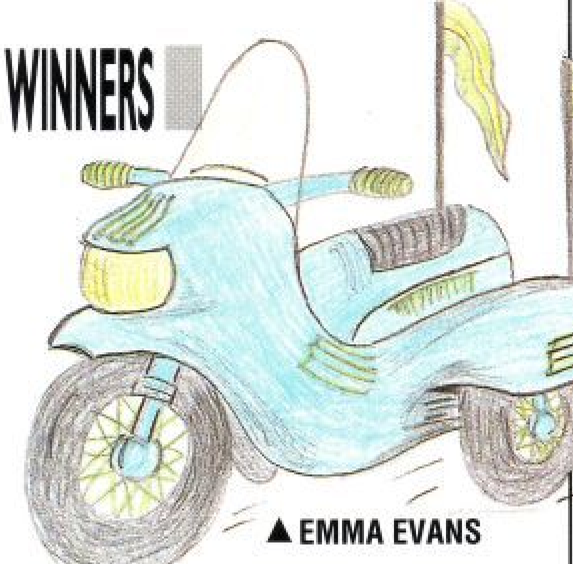
Getting on to lighter things after last month's mammoth, here's a real peach of a game from Mr Pugh. Guide the young mage through the castle ruins using the joystick and pick up the orbs of power left behind by the sorceror. Touch the demons and you lose strength, although pressing the fire button will cast a protective spell about you. Passing over the flashing energy spells will also help. Pressing P will pause the game, which you may need, to break off from the action for a while.

```
10 REM Sorcerer's Castle
20 REM By J.Pugh (5.12.88)
30 REM Initialise
40 ENV 1,5,3,1,1,0,16,5,-3,2:ENT 1,5,1,1,10,-1,1,10,1,1,5,-1,1
50 MODE 1:CLS:PRINT"Please wait while initialising"
60 SYMBOL AFTER 256:MEMORY 25000:SYMBOL AFTER 240
70 add=32048:FOR t=30000 TO 32016 STEP 32:GOSUB 90:NEXT
80 FOR t=49152 TO 51072 STEP 80:GOSUB 90:NEXT:GOTO 110
90 a$=HEX$(t):h$=MID$(a$,1,2):l$=MID$(a$,3,2)
100 h=VAL("&"+h$):l=VAL("&"+l$):POKE add,h:POKE add+1,l:add=add+2:RETURN
110 GOSUB 1140
120 FOR t=28800 TO 28999:POKE t,PEEK(t+640):NEXT:RESTORE 180:GOTO 180
130 FOR y=1 TO 20:FOR x=1 TO 20:CALL 29800,x,y,0:NEXT x,y:RETURN
140 CALL 29600:CALL 28800:RETURN
150 POKE pp,0:POKE pp+1,0:POKE pp+20,0:POKE pp+21,0
160 CALL 29844,px,py,dir:CALL 29844,px+1,py,dir+1:CALL 29844,px,py+1,dir+2
170 CALL 29844,px+1,py+1,dir+3:w=INT(en/10):RETURN
180 FOR t=0 TO 13:READ a:INK t,a:NEXT:DATA 0,1,2,3,4,8,6,10,11,23,23,1,16,26
190 GOSUB 800:ERASE dum:DEFINT a-z:INK 10,23,1:INK 11,1,23:MODE 0:BORDER 0
200 CALL 29960:FOR t=1 TO 21:CALL 29800,0,t,20:CALL 29800,19,t,21:NEXT
210 x=2:FOR t=1 TO 6:CALL 29800,x,0,17:CALL 29800,x+1,0,15:CALL 29800,x+2,0,15
220 x=x+3:NEXT:CALL 29800,0,0,18:CALL 29800,1,0,15:CALL 29800,19,0,19
230 FOR t=1 TO 18:CALL 29800,t,21,15:NEXT
240 RESTORE 240:FOR t=0 TO 10:READ pink(t):NEXT:DATA 0,3,6,5,7,8,17,9,18,19,22
250 FOR t=1 TO 8:READ ded(t):NEXT:DATA 478,506,568,638,716,758,851,956
260 hi=0
270 WINDOW #1,2,19,2,21:WINDOW #2,7,11,23,23:WINDOW #3,1,20,25,25
280 WINDOW #4,15,20,23,24:FOR t=1 TO 4:PAPER #t,0:PEN #t,t+4:CLS #t:NEXT
290 LOCATE 1,23:PEN 2:PRINT"SCORE:":PEN 15:LOCATE 1,24:PRINT"MAGIC  FORCE"
300 INK 15,pink(10):GOTO 730
310 REM New Game
320 sc=0:li=3:le=1:scr=1:en=1000
330 fc=0:oc=0:dir=1:tim=19:loc=25000+((scr-1)*360):FOR y=1 TO 20:FOR x=1 TO 18
340 CALL 29800,x,y,PEEK(loc):loc=loc+1:NEXT x,y
350 dead=0:px=1:py=19:pp=29381:GOSUB 160:IF w<0 THEN w=0:ELSE IF w>10 THEN w=10
360 CLS #4:FOR t=1 TO li:CALL 29760,(t*2)+12,22,1:NEXT
370 CLS #2:PRINT #2,USING"#####";sc;:INK 15,w
380 REM Main Game loop
390 IF dead=1 THEN 620:ELSE en=en-(0.1*le):CALL 29600:CALL 28800
400 IF PEEK(pp+40)=0 AND PEEK(pp+41)=0 THEN en=en-5
410 q=PEEK(pp)+PEEK(pp+1)+PEEK(pp+20)+PEEK(pp+21):IF q>14 AND q<>42 THEN 620
420 IF oc=8 THEN 690:ELSE IF en<0 THEN 620
430 w=INT(en/100):IF w>10 THEN w=10:ELSE IF w<0 THEN w=0
440 INK 15,pink(w)
450 xi=0:yi=0:IF INKEY(9)=0 OR INKEY(76)=0 THEN CALL 29760,px,py,9:en=en-50:fc=1
:GOTO 380:ELSE IF fc=1 THEN fc=0:GOSUB 150
460 IF INKEY(1)=0 OR INKEY(75)=0 THEN 520
470 IF INKEY(8)=0 OR INKEY(74)=0 THEN 590
480 IF INKEY(0)=0 OR INKEY(72)=0 THEN 600
490 IF INKEY(2)=0 OR INKEY(73)=0 THEN 610
500 IF INKEY(27)=0  THEN PEN #3,11:PRINT #3,"    Press  Space":WHILE INKEY$<>" "
:WEND:CLS #3
510 GOTO 380
520 a=PEEK(pp+2):b=PEEK(pp+22):xi=1:pn=1:x1=px:x2=px:y1=py:y2=py+1:dir=1
530 IF a=14 OR b=14 THEN sc=sc+10:CLS#2:PRINT #2,USING"#####";sc;:oc=oc+1:SOUND
7,239,-1,15,1,1:SOUND 7,190,-1,15,1,1
540 IF a=13 OR b=13 THEN sc=sc+5:en=en+150:CLS#2:PRINT #2,USING"#####";sc;:CLS #
3:SOUND 7,159,-2,15,1,1
550 IF (a<22 AND a>14) OR (b<22 AND b>14) THEN 380
```

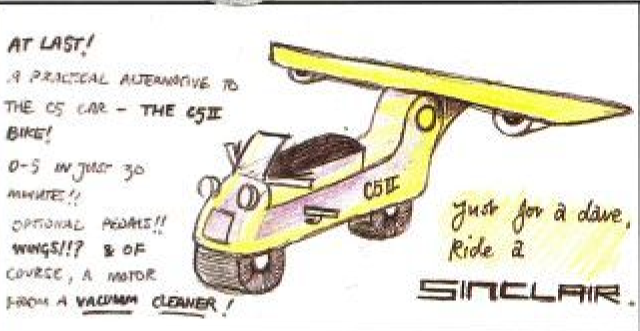
```
560 CALL 29844,x1,y1,0:CALL 29844,x2,y2,0:px=px+xi:py=py+yi:pp=pp+pn:GOSUB 160:C
ALL 29800,x1,y1,0:CALL 29800,x2,y2,0
570 IF a>21 OR b>21 THEN dead=1
580 GOTO 380
590 dir=5:a=PEEK(pp-1):b=PEEK(pp+19):xi=-1:pn=-1:x1=px+1:x2=x1:y1=py:y2=py+1:GOT
O 530
600 a=PEEK(pp-20):b=PEEK(pp-19):yi=-1:pn=-20:x1=px:x2=px+1:y1=py+1:y2=y1:GOTO 53
0
610 a=PEEK(pp+40):b=PEEK(pp+41):yi=1:pn=20:x1=px:x2=px+1:y1=py:y2=y1:GOTO 530
620 REM lose life
630 CALL 29760,px,py,dir:en=1000
640 CALL 29760,(li*2)+12,22,9
650 FOR t=1 TO 8:SOUND 7,ded(t),-1,15,1,1:NEXT
660 FOR t=1 TO 2000:NEXT:CLS #1
670 li=li-1:IF li=0 THEN 720
680 GOTO 330
690 REM Complete Screen
700 sc=sc+100*le:le=le+1:scr=scr+1:IF scr=7 THEN scr=1
710 CLS #1:FOR t=1 TO 200:NEXT:GOTO 330
720 IF sc>hi THEN hi=sc
730 CLS #1:CLS #4:PEN #1,8:PRINT #1:PRINT #1,"SORCERER'S  CASTLE";:PEN #1,2
740 FOR t=1 TO 18:PRINT #1,CHR$(208);:NEXT:PRINT #1:PRINT #1:PRINT #1:PEN #1,9
750 PRINT #1,"  Highest  Score":PRINT #1,"  Today is ";:PRINT #1,hi
760 PEN #1,2:PRINT #1:PRINT #1:PRINT #1,"   Press  Space":PRINT #1,"     To  Pla
y"
770 WHILE INKEY$<>" ":WEND
780 GOTO 320
790 REM Read in Screen Data
800 scr=1:loc=25000:RESTORE 900:DIM dum(18,20)
810 FOR x=1 TO 18:FOR y=1 TO 20:dum(x,y)=0:NEXT y,x
820 READ n,x,y:IF n>4 THEN 870:ELSE ON n GOTO 830,840,850,860
830 dum(x,y)=14:GOTO 820
840 dum(x,y)=13:GOTO 820
850 READ q:FOR t=1 TO q:dum(x,y)=16:y=y+1:NEXT:GOTO 820
860 READ q:FOR t=1 TO q:dum(x,y)=15:x=x+1:NEXT:GOTO 820
870 IF n=255 THEN 890
880 dum(x,y)=n:dum(x+1,y)=n+1:dum(x,y+1)=n+2:dum(x+1,y+1)=n+3:GOTO 820
890 FOR y=1 TO 20:FOR x=1 TO 18:POKE loc,dum(x,y):loc=loc+1:NEXT x,y
900 scr=scr+1:IF scr=7 THEN RETURN:ELSE 810
910 REM Screen data
920 DATA 26,13,1,1,6,3,4,4,4,6,1,18,5,4,14,6,5,22,5,7,30,14,7,1,11,8,4,9,9,5
930 DATA 3,10,10,3,2,1,11,1,4,11,4,1,12,5,1,18,13,22,2,14,4,13,14,6,34,17,15
940 DATA 2,7,16,1,10,16,4,7,17,5,1,8,20,1,18,20,255,0,0
950 DATA 30,7,1,1,16,3,2,18,3,4,14,4,5,1,2,4,4,1,5,6,30,9,5,1,12,9,1,1,10
960 DATA 4,7,10,7,4,1,11,3,26,6,12,1,18,13,4,9,14,5,4,16,14,3,3,9,15,6,22,3
970 DATA 15,34,17,15,2,12,16,1,10,16,4,10,17,3,1,8,20,1,18,20,255,0,0
980 DATA 22,1,3,2,1,5,2,18,5,3,6,5,6,3,13,5,6,22,7,5,4,1,6,2,4,17,6,2
990 DATA 30,1,8,30,17,8,1,5,10,1,7,10,1,12,10,1,14,10,4,3,11,14,1,8,13,1,11,13
1000 DATA 4,8,14,4,1,3,17,1,16,17,26,9,17,4,1,18,5,4,14,18,5,255,0,0
1010 DATA 22,10,1,1,6,2,1,13,2,4,4,3,12,3,4,4,10,3,15,4,10,4,8,6,4,1,3,6,1,16,6
1020 DATA 4,3,7,1,4,16,7,1,34,5,7,34,13,7,2,8,5,1,8,9,1,11,9,2,11,5,4,7,10,6
1030 DATA 34,9,12,1,7,15,1,11,15,4,3,16,14,3,9,17,4,3,10,17,4,26,5,17,22,13,17
1040 DATA 255,0,0,22,9,3,1,7,4,1,12,4,4,3,5,14,22,5,8,26,13,8,1,8,8,1,11,8,4,7
1050 DATA 9,6,30,3,12,30,15,12,2,6,12,2,13,12,34,9,13,4,5,13,3,4,12,13,3,3,6,14
1060 DATA 7,3,13,14,7,1,1,15,1,18,15,4,1,16,2,4,17,16,2,2,7,16,2,12,16,4,7,17,2
1070 DATA 4,11,17,2,1,7,20,1,12,20,255,0,0
1080 DATA 30,3,1,30,15,1,2,1,3,2,18,3,1,8,2,1,11,2,4,7,3,6,34,5,5,34,13,5,2,1
1090 DATA 8,1,8,8,1,11,8,2,18,8,4,1,9,4,4,7,9,6,4,15,9,4,34,1,11,34,17,11
1100 DATA 4,3,12,6,4,11,12,6,3,5,13,8,3,14,13,8,26,12,15,22,6,17
1110 DATA 2,4,16,2,15,16,4,3,17,2,4,15,17,2,1,4,20,1,6,20,1,13,20,1,15,20
1120 DATA 4,1,4,2,4,17,4,2,255,0,0
1130 REM Machine Code/Sprite Data
1140 ln=5090:RESTORE 1240
1150 FOR adr=&7300 TO &79F0 STEP 13
1160 READ byte$:chk=0
1170 FOR i=0 TO 12
1180 v=VAL("&"+MID$(byte$,i*2+1,2))
1190 POKE adr+i,v:chk=chk+v
1200 NEXT
1210 IF chk<>VAL("&"+RIGHT$(byte$,3)) THEN PRINT"ERROR in LINE";ln:STOP
```

```
1220 ln=ln+10:NEXT
1230 RETURN
1240 DATA 26132E17E5CDE674FE17C2C870699
1250 DATA E1E524CDE674E1E5F5242CCDE68CF
1260 DATA 7447F180FE00280BE1E5253E1A5A0
1270 DATA CD4974C30571E1E53E16CD4974667
1280 DATA E1E5253E00CD7174E1E53E0025604
1290 DATA 2CCD7174C30571FE1EC20571E164C
1300 DATA E52C2CCDE674E1E5F52C2C24CD768
1310 DATA E67447F180FE00280AE1E53E22668
1320 DATA CD4974C30571E1E52C3E1ECD49627
1330 DATA 74E1E53E00CD7174E1E53E0024652
1340 DATA CD7174E1253EFFBCC2847026136A0
1350 DATA 2D3EFFBDC8C384700000000000004A6
1360 DATA 00000000210000E5CDE674FE1A445
1370 DATA C2E773E1E525CDE674E1E5F52590E
1380 DATA 2CCDE67447F180FE00280AE1E5701
1390 DATA 3E16CD4974C32474E1E5253E1A57C
1400 DATA CD4974E1E53E0024CD7174E1E572A
1410 DATA 3E00242CCD7174C32474FE22C257D
1420 DATA 2474E1E52DCDE674E1E5F52D247BE
1430 DATA CDE67447F180FE00280AE1E53E713
1440 DATA 1ECD4974C32474E1E52D3E22CD623
1450 DATA 4974E1E52C3E00CD7174E1E53E6A3
1460 DATA 002C24CD7174E1243E14BCC2A357A
1470 DATA 7326002C3E17BDC8C3A3730000478
1480 DATA 0000000000000000DD6604DD6E292
1490 DATA 02DD7E00E5F5CD7174F1E1243C71B
1500 DATA E5F5CD7174F1E12C253CE5F5CD892
1510 DATA 7174F1E1243CC37174DD6604DD6E3
1520 DATA 6E02DD7E00F5E5E52600292944546
1530 DATA 4D292909E5C1E16C2600091148423
1540 DATA 711977E17C677D6FF1180C00004C6
1550 DATA 00DD6604DD6E02DD7E00E5267D577
1560 DATA 872E30856F46234EE1E57D8726580
1570 DATA 7D2EB0856F56235EE17C87876F600
1580 DATA 260019E5C5E1D10608C5D50104548
1590 DATA 00EDB0D17AC60857C110F1C900698
1600 DATA 000000000000000000000000DD0DD
1610 DATA 6602DD6E00E526002929E5D1294EF
1620 DATA 291901487109E5D1E16C26000042E
1630 DATA 197E322F75C900000000000000236
1640 DATA 2100003E00E5CD7174E1243E1444D
1650 DATA BC2803C30B752C3E19BDC82600458
1660 DATA C30B7500000000000000000000143
1670 DATA 00000000000000000000000000000
1680 DATA 00000000000000000000000000000
1690 DATA 00000000000000000000000000000
1700 DATA 0000000000004000000080000000C
1710 DATA 0C000000040000000110000000021
1720 DATA 040800000C0C0000040C080019055
1730 DATA 002200195133001933330033331A4
1740 DATA 2200333300A20000000400000012E
1750 DATA 0C0000000C0000040C00000C0C040
1760 DATA 00040C0C000C0C0C040C0C0C3C0A4
1770 DATA 0851003C0CA2003C7308000C33239
1780 DATA 0C000C0C0C080C0C0C080C0C0C088
1790 DATA 000C0C08000000040800000C0C044
1800 DATA 00040C080011002600 33A2260014A
1810 DATA 333326001133335100333300001BA
1820 DATA 0000000000008000000040000000C
1830 DATA 000C000000008000000220000000036
1840 DATA 0000000000A2043C00510C3C0017B
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1890 DATA 0C0C0800004F8E0005CF0C004F22C
1900 DATA 8E0C004F0C33004F1911004F9828B
1910 DATA B305CF9B3305CFCF334D8F0000507
1920 DATA 0CCF0A000C4D8F00330C8F00222BD
1930 DATA 268F0073678F003367CF0A33CF493
1940 DATA CF0A05CF1CC005CF1C684FCF1C51B
1950 DATA 394F8EC0394F8EC0C0CF0CC0C06C7
1960 DATA CF0C48C08E0C48C0C02CCF0A945DE
1970 DATA 2CCF0A362CCF8F36C04D8FC0C0617
1980 DATA 4D8FC0C00CCFC0840CCFC0840C6A6
1990 DATA 4D0000008A00004FCF008F0F8A31D
2000 DATA 45CF0A00008A000A00008F0F45295
2010 DATA 45CF0A0A008A0000C3C30041C343C
2020 DATA 8382C3C3C343C3C3C34383C3C3826
2030 DATA C383C3C3C34143C38200C3C3006DE
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2050 DATA F6FCA80000000000540000005133F
2060 DATA FCA8FC51F3FC00000000A80000588
2070 DATA 00F6FC0000F3F6FCA80000000057F
2080 DATA 005400000051FCA8FC51F3FCA862D
2090 DATA 000054A8000054A8000054A8002F4
2100 DATA 0054A2000054F3FCFCFC0051FC67E
2110 DATA A8FC51F3FCFCFCFCFCA800000087C
2120 DATA FCFC0000F9F6FCA8A8000000A86DB
2130 DATA 540000A851FCA8FC51F3FCFCFC825
2140 DATA FCFCA8000054F6FC0054F3F6FC81F
2150 DATA FC000000540054005400 51FCFC441
2160 DATA FC51F3FCA8000000A8000000FC588
2170 DATA FC0000F9F6FCA8A8000000A854633
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2190 DATA 54A8000054F6FC0054F3F6FCFC777
2200 DATA 00000054005400540051FCFCFC441
2210 DATA 51F3FC000050F00050F0F000F06A0
2220 DATA F03050F03030F0B03030F03030610
2230 DATA 30F0303030F0303030F0A000004C0
2240 DATA B070A0003030700071F330A071535
2250 DATA 1070A02010F00030F0A00070A0510
2260 DATA 00A0F0B0303050F0307000F0F0660
2270 DATA F00050F0F00050F0F000F0F0F0820
2280 DATA 50F0F000F0A00000F000F0A0F0730
2290 DATA 50F0A0F0F0F000F0F0A000F0A08C0
2300 DATA 0000F0000000000000000000000F0
2310 DATA 00000050F00050B07000B030303C0
2320 DATA 5030F39250B020B200F0201000517
2330 DATA 50F030500050B0F0A00000F0F0630
2340 DATA A00030F0F0003030F0A0303070570
2350 DATA F0303030F0303030F0303030F0570
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2400 DATA F0F0F00000F0F0A0000050F000690
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2420 DATA F3034153F3A34153A2010103A24FD
2430 DATA 0300030303030300000303020001A
2440 DATA 0303030003F3030253F3A30253342
2450 DATA A2010203A2030203030300000315B
2460 DATA 03030001030300000300000001011
2470 DATA 02000001030000000300000000009
2480 DATA 00000000030303000303020000011
2490 DATA 4300000182000043820000C30024E
2500 DATA 000000000000000000000000C30C3
2510 DATA 830041C30300C303034183510336B
2520 DATA 410251A34153F3A30103F3030045B
2530 DATA 0303030303000003030200030301D
2540 DATA 030003510302025 1A30253F3A333D
2550 DATA 0203F303020303030000030303 10F
2560 DATA 0001030300000300000001020000D
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2590 DATA 000182000043820000C300000020B
2600 DATA 00000000000000000000000000000
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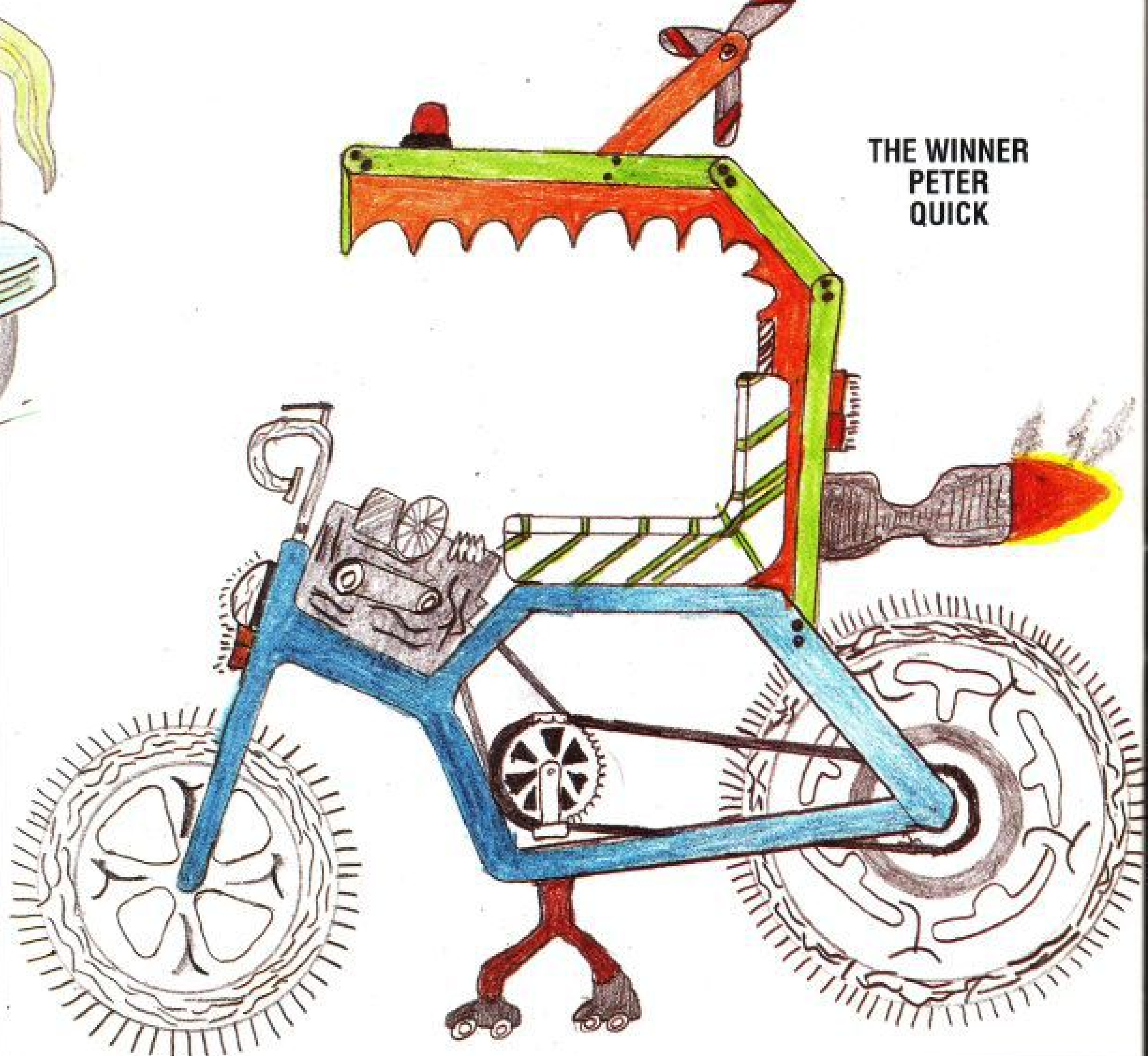
WINNERS



▲ EMMA EVANS



▲ DAVID CARTER

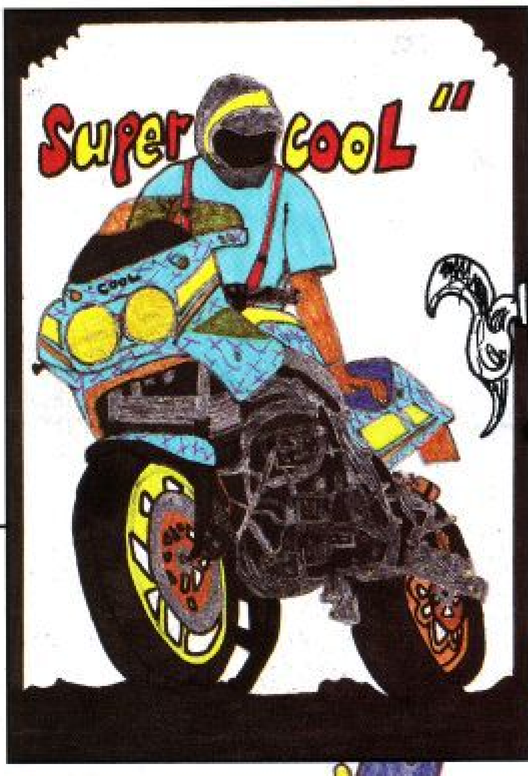


THE WINNER PETER QUICK

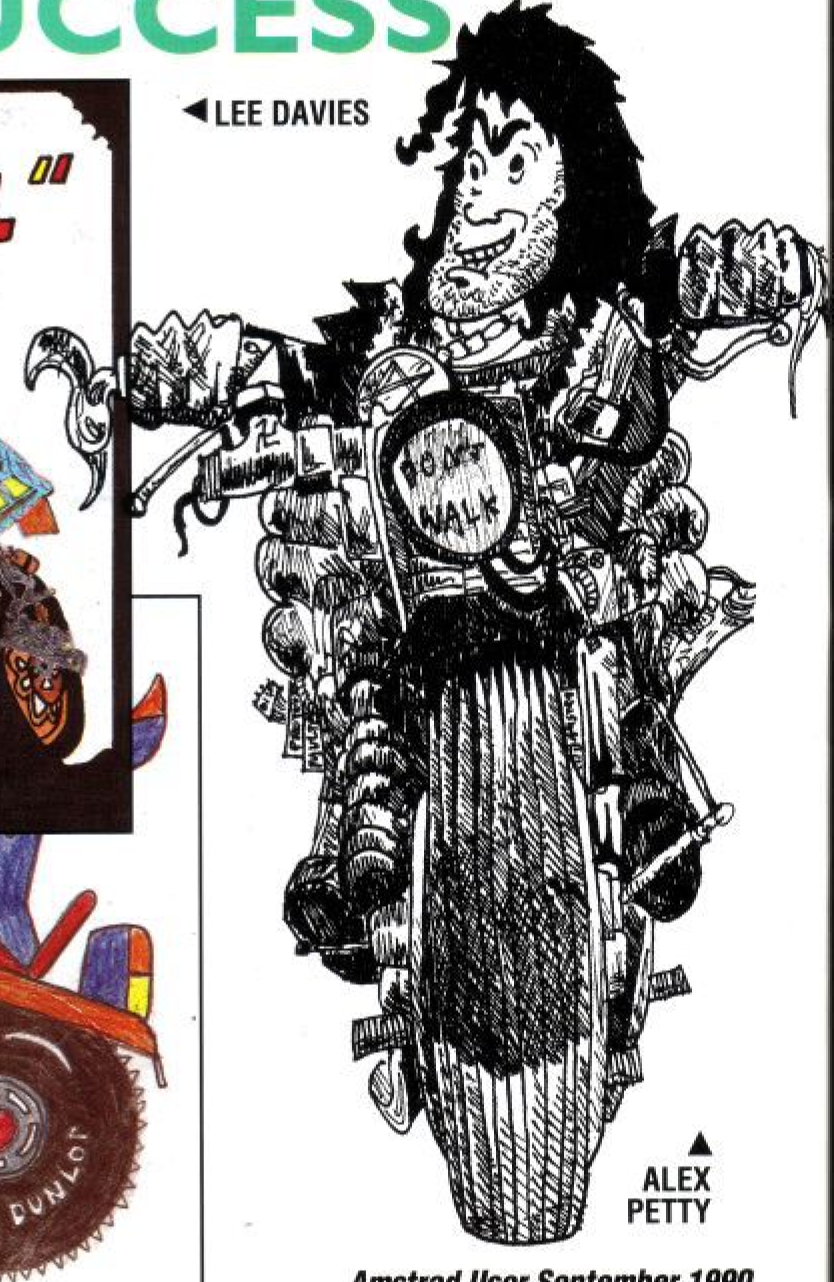
SUPERCHARGED SUCCESS

Digging through our competition mailbag this month, we certainly came across some weird and wonderful offerings. To make matters even worse, the quality of all of the drawings was so good, it took us hours and hours to pick the lucky winners. But, it has to be done and so, the lucky winner of the supercool biking jacket is Peter Quick of Swindon, Wiltshire, for his wacky rendition of the future bike. The runners-up, who get the fab cycles T-Shirts are Emma Evans of Chelmsford for her Tri-Sky, David Wishart of Belfast, Lee Davis of Llanelli, Alex Petty of Richmond, Surrey for his excellent portrayal of Hairy on two wheels, and we couldn't resist David Carter of Woking's vacuum driven futuristic C5II Bike.

Sorry we couldn't include you all in this success story, but keep on sending in the great entries. Your turn could come next.

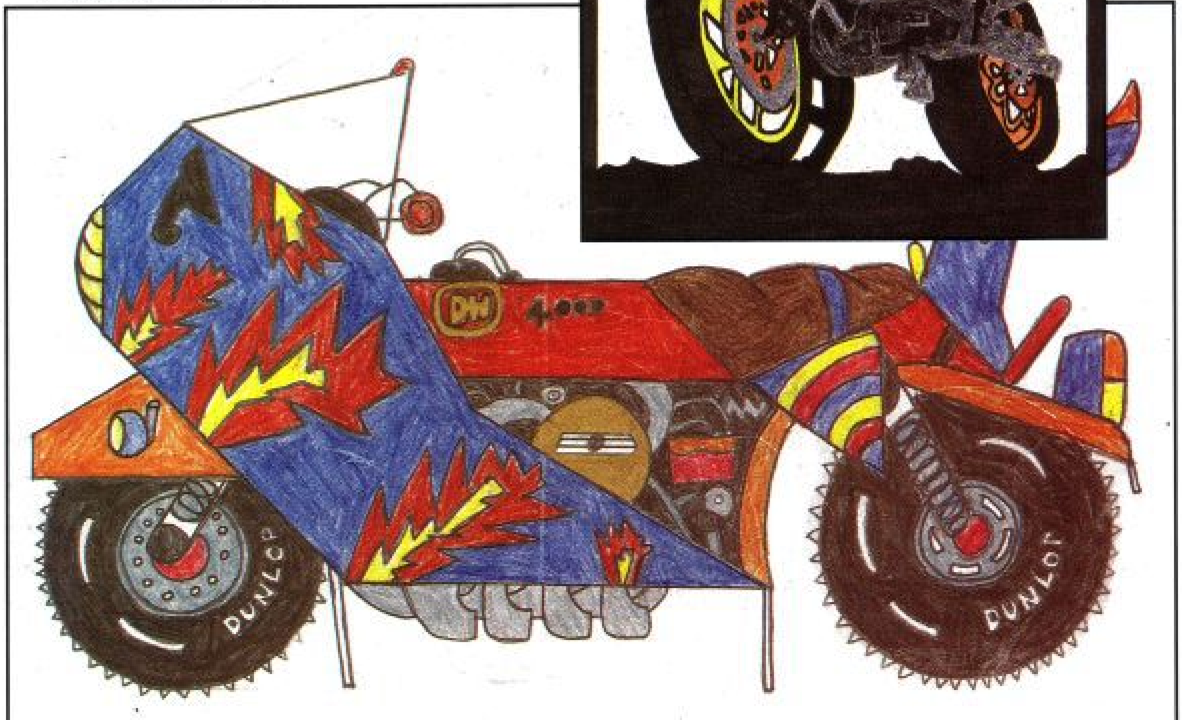


◀ LEE DAVIES



▲ ALEX PETTY

▼ DAVID WISHART



POPSHOP

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This is just some of the stock we've carried over the last six months...

**SOUL II SOUL   PRINCE   ADAMSKI
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ROXETTE   STONE ROSES   MADONNA
BETTY BOO   JASON DONOVAN
THE QUIREBOYS   THE CHARLATANS
SINEAD O' CONNOR   THE MISSION
DEPECHE MODE   WET WET WET
NEW KIDS ON THE BLOCK   MARTIKA**

Brun-Word Basics

Eddy Blackmore follows steps one, two and three for simple CPC encryption

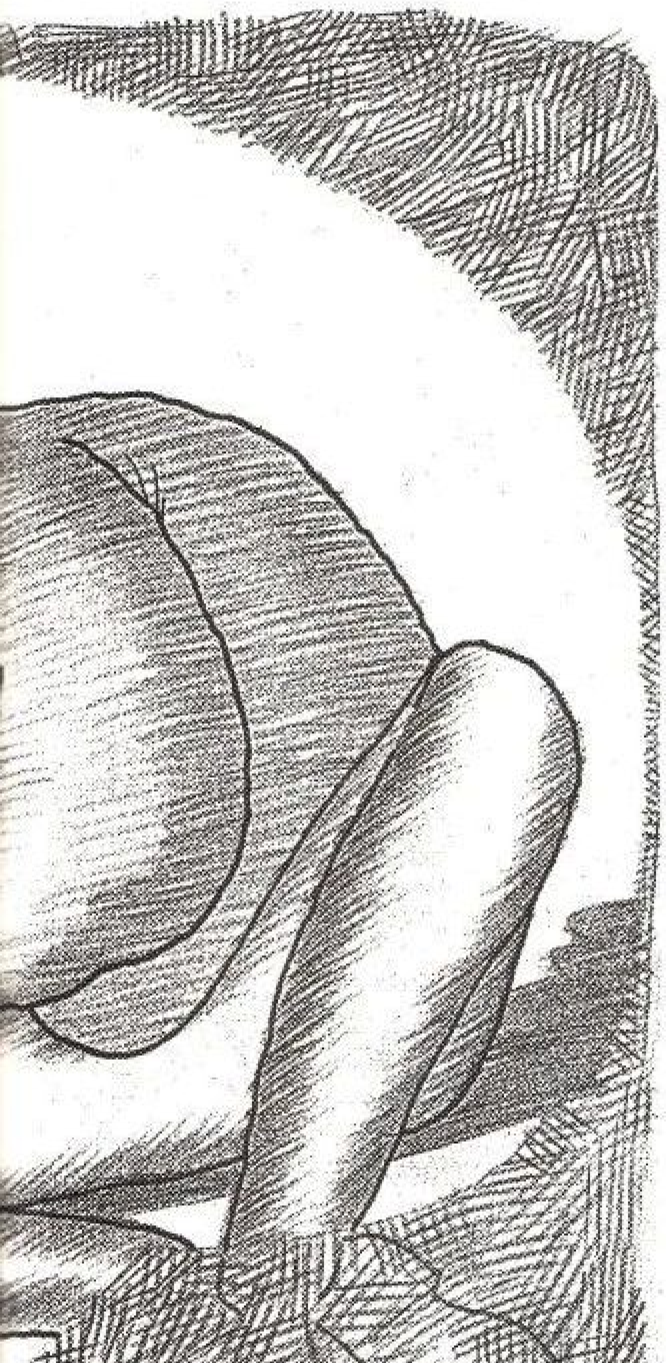


Every so often I get the urge to buy a PC computer. My normal cautious personality takes over and instead I buy a PC magazine which is quite enough to kill the idea dead. There's a lot of hue and cry about the power of PC's compared to the humble CPC but try my medicine of one PC magazine each time the pain starts to take hold. (I don't dispute that a PC is much more powerful but can you afford the software that achieves the use of the power?).

Recently I bought 'What PC' and in it is an impressive comparison of encryption systems. It struck home a conversation I had with Peter Brunning some 6 months ago about the security system of BrunWord. The encryption programmes reviewed in 'What PC' ranged in price from £99.50 to £195.00. Yes! one hundred and ninety five pounds.

What struck me dumb reading these mini reviews was that the encryption system of BrunWord 6128 compares very favourably in ease of use and strength of security and it's included in the £30 BrunWord package as a standard feature. I've never seen much written about BrunWord's encryption system so here's the low down.

Let's take an extreme example. You are writing your will and you want to



start by writing notes about how and why you want to distribute your wealth. These notes would be useful to keep to remind you how you made your decisions and help you to update the will as the future develops. Your actual will need only be placed somewhere safe, as sooner or later it obviously must be read. On the other hand the notes that helped you reach the decisions are quite clearly for your eyes only. What you need is a simple but very secure encoding system.

The first thing to appreciate is that even encrypted files can be decoded but a good system with a sensible code can take several years of continuous computer time. Many years ago I wrote a simple diary program in BASIC and used this to store my daily intimate thoughts. This was very definitely for my eyes only. I proudly showed my program and the encoded data to a rather mathematical colleague and confidently left him mulling over seemingly undecipherable data. I returned just 5 minutes later to see my words starting to print out on the screen and made a hasty flick at the OFF switch. My crude system had simply added a number into the numerical value of each digit. My friend had quickly deduced which symbol represented the space character and subtracted the ASCII values to find my simple code. That was a shock and a lesson.

All encryption systems work in a similar way to my very simple system but add the number in according to a mathematical formula. This coupled with using a code word considerably longer than one digit gives a very high degree of security.

As encryption systems go, the mathematical complexity of BrunWord's system is relatively low but the security is enhanced by two very important facts. Firstly, the encryption is performed directly from the program meaning that all secure files are encrypted before being saved to the disc, ensuring that backup files and recoverable erased file are also fully protected. Secondly, the encryption code can be up to 15 digits long using any printable characters.

The importance of the mathematical complexity is debatable as the programme will contain all the instructions needed to decipher the encoded data, except the actual code word. Any good programmer with the right software tools can soon extract the encoding system. It follows that the most important feature is maximum flexibility in the choice of the code word.

Using the BrunWord security system is very simple. The first step is to choose a code word and if you are silly enough to use a single character security code then anyone with just a few brain cells can break your code in an hour. for maximum security choose a code of 12 to 15 characters and use a mix of all the key types. It's worth remembering that many totally secure systems have been broken into by studying the person who originated the code word, and then deducing what their code is likely to be.

Let's assume that you feel like writing about a topic that is very strictly private. You have chosen a code word and committed it to your memory. Switch on your CPC put the BrunWord disc in the drive and type RUN "BRUNWORD". After a few seconds you will see the main menu. The programme always loads without a security code. It doesn't save your code and has no way of knowing what it is until you tell it. The main menu is displayed so press the Z key.

Type in your code and press <ENTER>. You will be asked to verify by typing in the same code again and when that is done, you are returned to the main menu. From then on every file that is saved to or loaded from disc will be encoded or decoded using your code word. It's as simple as that but be sure to remember your code.

I've already mentioned that the mathematical complexity of BrunWord's encryption is rather low but I want to take this further to help you get the ultimate protection. Dedicated encryption programmes usually have a very complex mathematical pattern which prevents an average person even beginning to look for your code. However, if a knowledgeable person gets access to the program as well as the data then the only protection is the security code itself.

It's quite obvious with BrunWord's encryption that you must choose a complex code to get full protection but this is usually just as important, though a lot less obvious, with the dedicated programs. I have deliberately laboured this point as it is very important.

The BrunWord security code can contain capital letters, numbers, punctuation marks, special printer characters and formatting characters but not the space character.

Choose SEFBCDEHUJIKSQ as your code and get low security. Your text will almost certainly contain regular spaces and the uniformity of the code word (all letters) will allow the outline shape of your text to show through. On the other hand 149"JON'+{M} is a very strong code and much easier to remember.

I'll leave you there folks but if there are other aspects of BrunWord or InfoScript that are of interest to you, drop me a line via ACU and we'll see what can be done.



The Majick that is Hayes!

Gordon, intrepid navigator through the endless maze of comms jargon and unraveller of mysteries, unveils the delights of the Hayes AT command set.

Good morrow, gentle reader! You may recall - way back when this series first started - that I told you, in all seriousness, that comms is not the arcane wizardry that some writers would like to have you believe. I hope that the journeys we've taken together thus far have gone some way to proving that this is the case. Indeed, I know that, for some of you, the series has been a painless introduction to comms, and that you've taken the plunge, got online, and discovered how easy and enjoyable it all can be - the number of 'initiates' that have accessed our Bulletin Board System (now renamed to Maxwell House, for obvious reasons) is living proof of that. I have to say that it makes me feel warm inside to see such happenings.

Even so, one aspect of modem usage that still causes heartache for novice CPCers is the Hayes command set and its variants. So what is this 'Hayes' thingy, you all ask? Well, in much the same way as you have the bar commands for your lovable pooter, intelligent modems for the home market tend to conform to a set of commands pioneered by modem giants Hayes, a US company that's been around since Pontius was a UT Pilate. It's all based around a two character attention string, the famed 'AT'!

'AT' means 'ATtention, modem, there's a command coming your way' - the equivalent of holding a choccy biccy over Fido's nose. Its effect is to put the modem into a state of anticipation, waiting on your every word and ready to do exactly what you tell it to do - just like a computer. Note, it will do what you tell it, not necessarily what you want it to do - this is where most people meet their downfall.

You see, for some considerable time, the AT command set (let's drop the Hayes) was copyright to Hayes, and so, even though many of the commands available were 'standard' - like ATD<number> to dial, ATA to go online and send an answer tone, ATH to hang up - many companies 'improved' on the fairly minimal set that Hayes had set up. They called their particular versions 'Extended Hayes Command Sets' and one manufacturer's lot would be very different from another's.

This, in turn, and as modems became more powerful, was the beginning of mass confusion for unenlightened comms users. They would get used to one particular modem, and then upgrade to a more powerful one from a different manufacturer, and discover that the commands they knew and loved no longer worked. But there is a secret, which, if you promise not to tell anyone, I'll share with you! It's how to get even the most complicated of intelligent modems working and online, even if you're not using all the knobs and whistles on it.

Ready?? Ok, here goes! You stick to the bare minimum of commands - in other words, the commands that Hayes intended, and add only the barest minimum of 'extended' commands.

So, the basics. First, you want to dial a number and log on? Fine, use ATD0718281577. Messy? Ok, put some spaces in! - ATD 071 828 1577 - the modem doesn't care, and will ignore any spaces. You'll notice I've put the alphabetic portions in upper case - some modems will accept only upper case, while some others will parse lower to upper for you. Play safe, and keep it upper case, then there's no problem.

Next - let's modify the basic dial command. You have only Pulse dialling phone lines?? Ok, make the ATD into ATDP - the P is for Pulse. You have tone dialling enabled on your line, but your modem defaults to pulse dialling? Make it ATDT <number> - the ATDT tell the modem to dial using tones - the beep-bop you'll hear.

What if you are dialling long distance using Mercury, and you need to insert a tone dial string after the pulse dial access call that your exchange allows? Simple

ATDP 131, t 1234565789 <number>

sets pulse, dials 131, and

Changes to tone sends your Mercury ID and password

and this is the number you wanted to call.

Note the little comma placed in the string just after the ATDP 131. This commands the modem to pause for a preset time. If it's four seconds (you can usually change it) then the modem will wait four seconds before carrying out the next command. Thus, two commas together will give you an eight second pause. Useful!

Suppose you and a mate are chatting on the phone, and you decide you want to transfer some files between yourselves. Let's assume that a) your CPC is running some comms software, and b) that the phones you're using are plugged into the back of your modems. What do you do?

First, both of you need to get into

Terminal mode on your software, so you can talk to your modems. You're A, and your mate is B.

A sends the following string to his modem - ATO (or ATD) B sends this one... ATA

You hear the modems begin to screech, and put the phones down - contact!

The ATA means go online and send an answer tone, if you get a reply, make contact. ATO means go online as though you'd sent a phone number, and generate the originate tones, if you get an answer, contact.

ATD does the same as ATO - in fact, it tells the modem to dial absolutely nothing at all, and continue as if it had dialled a full phone number - very similar to ATO, in fact.

So far, things are very simple, but comms software often requires to know what the modem is up to, and how far through a call it has got. So, the modem can send call progress messages back to the computer. These can be either Verbose or Numeric. Verbose messages are things like: 'CONNECT 2400' 'CONNECT' 'BUSY' 'NO DIAL TONE' 'NO ANSWER' 'NO REPLY' 'DIALLING and so on. The numeric codes are just that, numbers that represent the verbose codes.

Problems can arise when a piece of software wants, say, numeric codes, and your modem is set up to send verbose messages. What do you do?? You use ATV. ATV takes two values - ATV0 and ATV1. ATV0 (you can just send ATV) instructs the modem to send numbers, so, ATV1 tells it to send words. If your software supports words, use them - it means that if you're driving the modem manually, instead of letting the software do it, you'll see plain English messages instead of a host of numbers.

There is an associated command, ATX (0,1 are its minimal values) which can take a wide range of values depending on which modem you're using. It sets the result code messages that the modem will use. For most purposes, it can be ignored, or set to 1. If your software won't work, check out the manual, and set ATX to the highest number allowed.

There are only two other commands that you need worry about, unless you're using an MNP modem - which we'll cover another time - and they govern the loudspeaker in the modem, and what are known as the 'S- registers'.

The speaker is controlled with ATM. If you're dialling long numbers and you don't want to disturb sleeping beauties in the house, send ATM (effectively ATM0), which switches the speaker off completely. The more normal value is ATM1, which turns the speaker on until the modem detects a carrier - locks onto another modem - at which point, it switches to off. Masochists amongst you should try ATM2, but don't blame me if you're deaf this time next month!

And finally, the S-registers. These are locations in the modem's memory that hold configuration information. Most modems implement a standard set, and then have others peculiar to themselves. The standard ones are reproduced below:

S0 - number of rings before answer S1 - counts the number of rings S2 - escape code character S3 - carriage return character S4 - line feed character S5 - backspace character S6 - wait time before blind dialling S7 - wait time for carrier detect S8 - pause time

These are the standard S-registers, and probably all you will ever need to fiddle with. The important ones are S0, S6, S7 and S8

S0 - this is the one for AutoAnswer. Under normal circumstances (ie. default) its value is set to 0, but it will accept any value from 0 to 255. 0 means never answer, while any other value is the number of rings the modem hears before it should answer. If you are setting up a BB, best set this register to 1, with the command ATS0=1. The modem will answer on the first ring. It works in conjunction with S1, which counts the rings. When the two registers hold the same value, the modem goes online in answer mode.

S6 - There are times when BT can't get a dialling tone to you immediately you pick up the phone. If this is a problem for you, you can set this value to a larger number to allow more time for the dialling tone to appear at the modem - it's that simple.

S7 - One of my favourite registers, this has allowed me to seem like a miracle worker dozens of times. It holds a value which is the time, in seconds, that the modem will wait until it detects a carrier. If it doesn't make a connection with another modem inside that time, it drops the line - hangs up the phone. Now, when you get your BABT approved modem, it tends to have a value of around 30 seconds as a default, and really should not be set to longer than a minute.

If you're dialling an international call, however, it can take a lot longer than that before the call gets to its destination. If the value in S7 isn't high enough, the modem times out before anything happens. This happened to a friend of mine as we were both trying to make data calls home from the USA. He couldn't get his modem to make the connection - it kept dropping the line. He didn't know about S7, so I told him to send ATS7=90 and try again. You should have seen the look on his face when his modem, which he was on the point of flinging off the nearest wall, connected with the service he wanted to use. Exit one Gordon Bates with a very smug look on his face. You can bet my mate won't forget about S7 again!!

S8 - the pause time. Remember the comma we mentioned earlier? This register sets the time that the modem pauses when it sees the comma in a dial string. It is usually set in seconds, so, if you find (as I used to) that it takes longer than a couple of seconds for a mercury call to catch the secondary dial tone, you might like to increase the value in this register, rather than add more commas to the string. It's as simple as that.

The other registers are useful, but rarely need to be altered by the average user. Be especially careful to avoid playing with S2, S3, S4, S5 and, if it's available, S12. These can seriously affect your modem's operation, requiring a grab at the big red switch.

The last (honest) command you need to know is the ATZ command. I've left it till last, since I reckoned you'd all be messing with AT-this, AT that, ATS this=that and generally experimenting. ATZ resets your modem to its defaults - it's called the lesser panic button. If things aren't working as they should, you send ATZ, and with a bit of luck and a following wind, everything goes back to the state it was in before you coc... er made a mess of it.

So there you have it, the Gordon Bates Pocket Guide to Driving Hayes-type Modems. I've sorted countless problems out using little more than I've shown you here, except that I usually build up an 'initialisation' string, which might look like this:

ATS7=50M1V1X1<carriage return>

and can be followed with the dialling commands we've already discussed. If you have problems, that last string might just be a good place to start. All you experts out there (better you than me, bearing in mind that expert is defined thus - an EX is a has-been, and a SPURT is only a drip under pressure) please bear in mind that this article is intended only to give simple guidance.

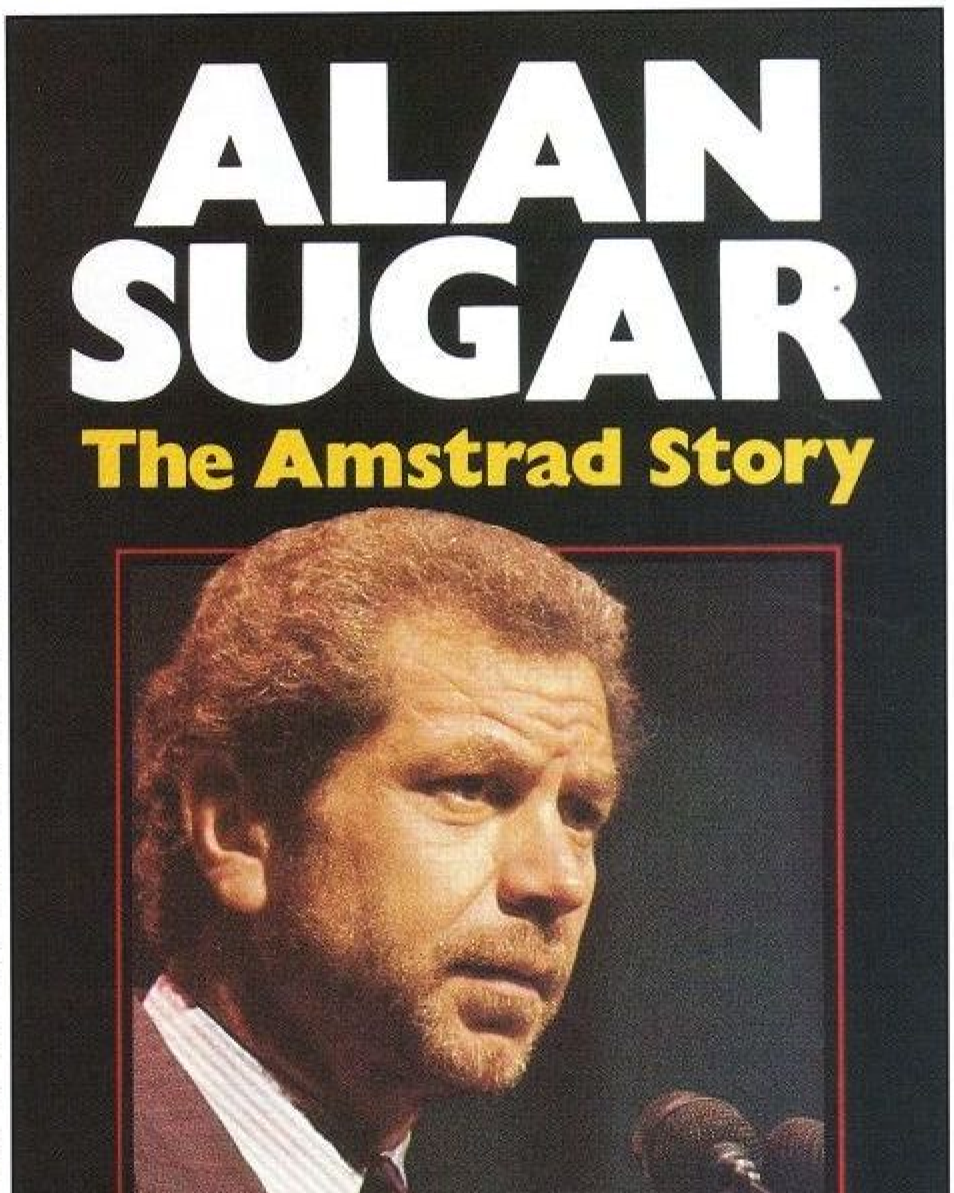
Sweet Success

Yvonne Taylor takes a look at the heady world of Amstrad's Top Dog Alan Sugar.

David Thomas has written on a range of subjects for the *Financial Times*, including industry and employment. He began to follow Amstrad while covering the electronics industry for the *FT*. It was this that led him to become interested in writing the Alan Sugar/Amstrad story. Alan Sugar had never agreed to this before, when it was suggested by other writers and publishers but he fully co-operated with David Thomas, as did the Sugar family, friends and business associates. Alan Sugar did see a draft copy of the book but the book is essentially the Thomas view of Amstrad and Sugar, as he states in the Preface.

No doubt many of you will be thinking, "Oh no; not another one! This sort of book just has to be boring, technical and probably pretentious into the bargain." Well, if you think that, you are very wrong. *Alan Sugar The Amstrad Story* is a good read from page 1. It starts in the summer of 1979, as the senior partner of one of the City's most prosperous stockbrokers meets an untidy, unshaven Sugar in a run-down warehouse. It doesn't exactly sound like an auspicious beginning for a man who wants his company to go public but it works, although you will only see why if you read the book! After that, the story goes into flashback, to show how Sugar brought himself and Amstrad to that point. "So what?" you say. "Why should I care?" The Amstrad computer sitting on your desk at home or at work should tell you why. This book is not just about a few business deals; it is about a man whose ideas and drive have brought you help for your business and personal satisfaction. Maybe you only use your machine to play games, or perhaps you have become a skilled programmer or saved yourselves time and money at work: all that is because of Sugar and Amstrad. Those are all good enough reasons for you to read the book but there is another. This book tells the story of the rise of a small company until it has today become one of the most successful consumer electronics concerns in Europe. You may not be interested in Alan Sugar personally but his business philosophy is another matter. This segment is taken from only the fourth page of the book:

"Amstrad designs cheap and simple products by cutting out features which consumers do not really want; undercuts its competitors by manufacturing its products wherever it finds the best prices; retains the flexibility to switch its source of supply whenever a cheaper one emerges; drives prices down still further by manufacturing in large volumes for a mass market; stimulates that market through massive advertising campaigns; and transforms markets by encouraging a whole new segment of consumers to start using its simple, inexpensive products."



Now that is some philosophy, it even has its own name: the "Amstrad effect." An effect developed and implemented by a born entrepreneur. At the age of 13, Sugar was selling his home-made ginger beer to local kids. Later, he made money from photography and market stalls. Sugar knew what he wanted and went out and got it. The book quotes Lord Young, former Secretary of State for Trade and Industry, as saying of Sugar: "He's one of a new breed of British entrepreneurs. I would like to see people like that as role models for young people coming into business. I want people to say: damn it, if he can do it, I can."

The point is that you can. This book may not offer all the answers that you need but it can show you one very successful way to go. It's not just about computers either; other Amstrad interests, including Sky television are detailed too. Apart from all that, Alan Sugar The Amstrad Story is an excellent read. At 14.99, it's cheap too: perhaps the "Amstrad effect" has struck again!

Title:	Alan Sugar The Amstrad Story
Author:	David Thomas
Publisher:	Century
Tel:	071 973 9750 (Random Century Ltd.)
Hardback:	366pp
Price:	14.99

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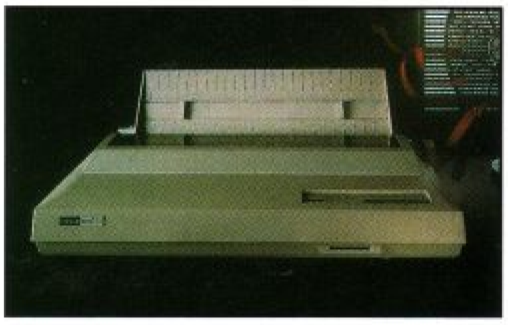
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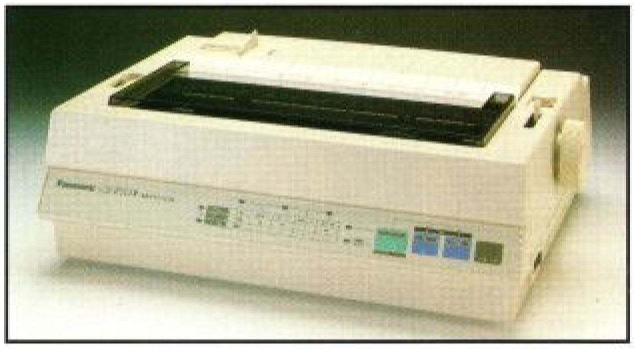
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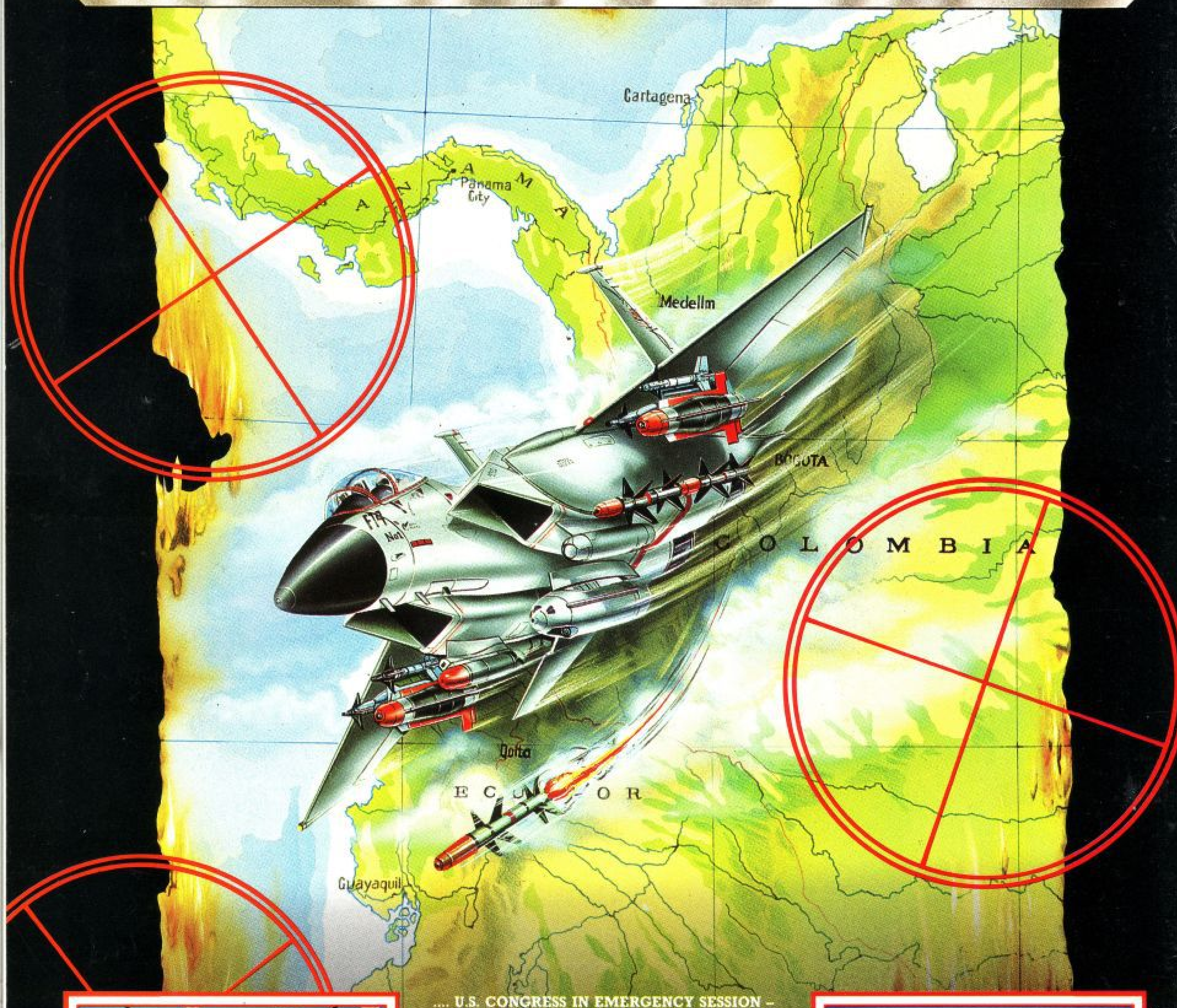
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